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Proceedings

MISSISSIPPI DOCUMENTS

HOUSE OF REPRESENTATIVES

REPORT OF THE COMMISSIONER

1861-62

IN THE

REPORT OF THE COMMISSIONER
OF THE LAND OFFICE
1861-62

MISCELLANEOUS DOCUMENTS

OF THE

HOUSE OF REPRESENTATIVES

PRINTED DURING THE

SECOND SESSION OF THE THIRTY-SEVENTH CONGRESS,

1861-'62.

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1862.

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LIST OF THE MEMBERS

OF THE

HOUSE OF REPRESENTATIVES OF THE UNITED STATES

AND THEIR PLACES OF RESIDENCE,

DURING THE

THIRTY-SEVENTH CONGRESS, SECOND SESSION,

COMMENCING MONDAY, DECEMBER 2, 1861.

MAINE.

1. John N. Goodwin South Berwick.
2. Charles W. Walton Auburn.
3. Samuel C. Fessenden Rockland.
4. Anson P. Morrill Readfield.
5. John H. Rice Foxcroft.
6. Frederick A. Pike Calais.

NEW HAMPSHIRE.

1. Gilman Marston Exeter.
2. Edward H. Rollins Concord.
3. Thomas M. Edwards Keene.

VERMONT.

1. E. P. Walton, jr Montpelier.
2. Justin S. Morrill Strafford.
3. Portus Baxter Derby Line.

MASSACHUSETTS.

1. Thomas D. Eliot New Bedford.
2. James Buffinton Fall River.
3. Benjamin F. Thomas Boston.
4. Alexander H. Rice Boston.
5. Samuel Hooper Boston.
6. John B. Alley Lynn.
7. Daniel W. Gooch Melrose.
8. Charles R. Train Framingham.
9. Goldsmith F. Bailey Fitchburg.
10. Charles Delano Northampton.
11. Henry L. Dawes North Adams.

RHODE ISLAND.

1. William P. Sheffield Newport.
2. George H. Browne Providence.

CONNECTICUT.

1. Dwight Loomis Rockville.
2. James E. English New Haven.
3. Alfred A. Burnham Windham.
4. George C. Woodruff Litchfield.

NEW YORK.

1. Edward H. Smith Smithtown, Suffolk county.
2. Moses F. Odell Brooklyn.
3. Benjamin Wood New York.
4. James E. Kerrigan New York.
5. William Wall New York.
6. Frederick A. Conkling New York.
7. Elijah Ward New York.
8. Isaac C. Delaplaine New York.
9. Edward Haight Westchester.
10. Charles H. Van Wyck Bloomingburg.
11. John B. Steele Kingston.
12. Stephen Baker Poughkeepsie.
13. Abraham B. Olin Troy.
14. Erastus Corning Albany.
15. James B. McKean Saratoga Springs.
16. William A. Wheeler Malone.
17. Socrates N. Sherman Ogdensburg.
18. Chauncey Vibbard Schenectady.
19. Richard Franchot Morris, Otsego county.
20. Roscoe Conkling Utica.
21. R. Holland Duell Cortland Village.
22. William E. Lansing Chittenango.
23. Ambrose W. Clark Watertown.
24. Charles B. Sedgwick Syracuse.
25. Theodore M. Pomeroy Auburn.
26. Jacob P. Chamberlain Seneca Falls.
27. Alexander S. Diven Elmira.
28. Robert B. Van Valkenburgh Bath.
29. Alfred Ely Rochester.
30. Augustus Frank Warsaw.
31. Burt Van Horn Newfane.
32. Elbridge G. Spaulding Buffalo.
33. Reuben E. Fenton Frewsburg.

NEW JERSEY.

1. John T. Nixon Bridgeton.
2. John L. N. Stratton Mount Holly.
3. William G. Steele Sommerville.
4. George T. Cobb Morristown.
5. Nehemiah Perry Newark.

PENNSYLVANIA.

1. William E. Lehman Philadelphia.
2. Charles J. Biddle Philadelphia.
3. John P. Verree Philadelphia.
4. William D. Kelley Philadelphia.
5. William Morris Davis Milestown, Philadelphia.
6. John Hickman West Chester.
7. Thomas B. Cooper Coopersburg.
8. Sydenham E. Ancona Reading.
9. Thaddeus Stevens Lancaster.
10. John W. Killinger Lebanon.
11. James H. Campbell Pottsville.
12. Hendrick B. Wright Wilkesbarre.
13. Philip Johnson Easton.
14. Galusha A. Grow Glenwood.
15. James T. Hale Bellefonte.
16. Joseph Baily Newport.
17. Edward McPherson Gettysburg.
18. Samuel S. Blair Hollidaysburg.
19. John Covode Lockport Station.
20. Jesse Lazear Waynesburg.
21. James K. Moorhead Pittsburg.
22. Robert McKnight Pittsburg.
23. John W. Wallace Newcastle.
24. John Patton Curwensville.
25. Elijah Babbitt Erie.

DELAWARE.

1. George P. Fisher Dover.

MARYLAND.

1. John W. Crisfield Princess Anne.
2. Edwin H. Webster Belair.
3. Cornelius L. L. Leary Baltimore.
4. Henry May Baltimore.
5. Francis Thomas Frankville.
6. Charles B. Calvert Hyattsville.

VIRGINIA.

- 1.
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7. Charles H. Upton Falls Church.
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- 9.
10. William G. Brown Kingwood.
11. Jacob B. Blair Parkersburg.
12. Kellian V. Whaley Ceredo.
- 13.

NORTH CAROLINA.

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SOUTH CAROLINA.

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GEORGIA.

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ALABAMA.

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MISSISSIPPI.

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LOUISIANA

- 1.
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OHIO.

1. George H. Pendleton Cincinnati.
2. John A. Gurley Cincinnati.
3. Clement L. Vallandigham Dayton.
4. William Allen Greenville.
5. James M. Ashley Toledo.
6. Chilton A. White Georgetown.
7. Richard A. Harrison London.
8. Samuel Shellabarger Springfield.
9. Warren P. Noble Tiffin.
10. Carey A. Trimble Chilicothe.
11. Valentine B. Horton Pomeroy.
12. Samuel S. Cox Columbus.
13. Samuel T. Worcester Norwalk.
14. Harrison G. Blake Medina.
15. Robert H. Nugen Newcomerstown.
16. William P. Cutler Constitution.
17. James R. Morris Woodfield.
18. Sidney Edgerton Tallmadge.
19. Albert G. Riddle Cleveland.
20. John Hutchins Warren.
21. John A. Bingham Cadiz.

KENTUCKY.

1. (Vacancy.)
2. James S. JacksonHopkinsville.
3. Henry Grider.....Bowling Green.
4. Aaron Harding.....Greensburg.
5. Charles A. Wickliffe.....Bardstown.
6. George W. DunlapLancaster.
7. Robert MalloryLa Grange.
8. John J. Crittenden.....Frankfort.
9. William H. Wadsworth.....Maysville.
10. John W. MenziesCovington.

TENNESSEE.

- 1.
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INDIANA.

1. John LawEvansville.
2. James A. Cravens.....Hardinsburg.
3. W. McKee DunnMadison.
4. William S. Holman.....Aurora.
5. George W. Julian.....Centreville.
6. Albert G. Porter.....Indianapolis.
7. Daniel W. Voorhees.....Terre Haute.
8. Albert S. White.....Stockwell.
9. Schuyler Colfax.....South Bend.
10. William Mitchell.....Kendallville.
11. John P. C. ShanksJay Court-House.

ILLINOIS.

1. Ellihu B. WashburneGalena.
2. Isaac N. Arnold.....Chicago.
3. Owen LovejoyPrinceton.
4. William KelloggCanton.
5. William A. Richardson.....Quincy.
6. (Vacancy.)
7. James C. Robinson.....Marshall.
8. Philip B. Fouke.....Belleville.
9. John A. LoganBenton.

MISSOURI.

1. Francis P. Blair, jr. St. Louis.
2. James S. Rollins Columbia.
3. (Vacancy.)
4. Elijah H. Norton Platte City.
5. (Vacancy.)
6. John S. Phelps Springfield.
7. John W. Noell Perryville.

ARKANSAS.

- 1.
- 2.

MICHIGAN.

1. Bradley F. Granger Ann Arbor.
2. Fernando C. Beaman Adrian.
3. Francis W. Kellogg Grand Rapids.
4. Rowland E. Trowbridge Birmingham.

FLORIDA.

- 1.

TEXAS.

- 1.
- 2.

IOWA.

1. James F. Wilson Fairfield.
2. William Vandever Dubuque.

WISCONSIN.

1. John F. Potter Troy.
2. Luther Hanchett Plover.
3. A. Scott Sloan Beaver Dam.

CALIFORNIA.

1. Timothy G. Phelps Redwood City.
2. Aaron A. Sargent Nevada City.

MINNESOTA.

1. Cyrus Aldrich Minneapolis.
2. William Windom Winona.

OREGON.

1. George K. Shiel Salem.

KANSAS.

1. Martin F. Conway Lawrence.

DELEGATE FROM NEW MEXICO.

1. John S. Watts Santa Fé.

DELEGATE FROM UTAH.

1. John M. Bernhisel Great Salt Lake City.

DELEGATE FROM WASHINGTON.

1. William H. Wallace Steilacoom.

DELEGATE FROM NEBRASKA.

1. Samuel G. Daily Peru, Nemaha county.

DELEGATE FROM COLORADO.

- Hiram P. Bennett Denver.

DELEGATE FROM NEVADA.

- John Cradlebaugh Carson City.

DELEGATE FROM DAKOTA.

- John B. S. Todd Fort Randall.

CHARLES H. FOSTER.

PAPERS

IN THE CASE OF

CHARLES H. FOSTER,

CLAIMING

A seat as a representative from the State of North Carolina.

DECEMBER 2, 1861.—Referred to the Committee of Elections, and ordered to be printed.

Proclamation by the Governor.

STATE OF NORTH CAROLINA, *Executive Department.*

To the people of North Carolina :

Whereas, an ordinance of the convention of North Carolina, passed on Monday, 18th November, 1861, directs the provisional governor of this Commonwealth in the following words, to wit: "Whereas, it is desirable that this State shall be represented in the federal Congress, and maintain her due weight in the councils of the Union, therefore the provisional governor be directed hereby to order special elections, in accordance with chapter sixty-nine of the Revised Code, as soon as practicable and expedient, in any district or districts now unrepresented;" and whereas the Revised Code of this State, chapter 69, section 5, provides as follows, to wit: "If at any time, after the expiration of any Congress, and before another election, or if, at any time after any election, there shall be a vacancy in the representation in Congress, the governor shall issue a writ of election, and by proclamation shall require the voters to meet in their respective counties at such times as may be appointed therein, and at the places established by law, then and there to vote for a representative in Congress to fill the vacancy, and the election shall be conducted in like manner as regular elections;" and it appearing that the second congressional election is unrepresented:

Now, therefore, I, Marble Nash Taylor, governor of the State of

North Carolina, do hereby notify and require the good and loyal people of the second congressional district of this State, qualified to vote for members of the house of commons of the general assembly, to assemble at the several voting precincts established by law therein, on Thursday, the 28th day of November, 1861, and cast their ballots for a representative of the State in Congress.

In witness whereof, I have hereunto set my hand and caused the great seal of the State to be affixed, at Hatteras, this eighteenth day of November, in the year of our Lord eighteen hundred and sixty-one, and of the independence of the United States the eighty-sixth.

MARBLE NASH TAYLOR.

STATE OF NORTH CAROLINA, *Executive Department.*

Whereas on Thursday, November 28, 1861, at an election ordered and held in accordance with a provision of the Revised Code of the Commonwealth, and pursuant to an ordinance of the convention, passed on the 18th of November, 1861, for the purpose of appointing a representative of the second district of the State in the Congress of the United States, Charles Henry Foster did receive a majority of all the votes so cast:

Now, therefore, I, Marble Nash Taylor, governor of the State of North Carolina, do hereby, as required by law, commission the said Charles Henry Foster as a representative of the State in Congress.

In witness whereof I have hereunto set my hand and caused the great seal of the State to be affixed, at Hatteras, this twentieth day of November, in the year of our Lord one thousand eight hundred and sixty-one, and of the independence of the United States the eighty-sixth.

MARBLE NASH TAYLOR.

To whom it may concern:

This is to certify that Charles Henry Foster, a candidate for the Congress of the United States for the second district of North Carolina, has thoroughly canvassed every portion of the district which was accessible to a public champion of the Union; that the polls were opened and an election regularly held, in accordance with the constitution and laws of this Commonwealth, at every precinct within the limits of the district where the voters were not obstructed by armed force, and that the said Foster received an overwhelming majority of all the votes so cast.

M. N. TAYLOR.

HATTERAS, *Hyde county*, November 29, 1861.

Minutes of the convention.

At a convention of the people of the State of North Carolina, assembled at Hatteras, Hyde county, North Carolina, on the eighteenth of November, in the year of our Lord one thousand eight hundred and sixty-one, for the purpose of establishing a provisional or temporary government for the said State, George W. Stowe was appointed president, and Zachariah Burrass, clerk.

The following named counties were found to be represented by delegates and proxies, to wit: Guilford, Caswell, Chatham, Union, Craven, New Hanover, Currituck, Northampton, Wake, Rowan, Watauga, Wilkes, Yadkin, Surry, Yancey, McDowell, Rutherford, Alexander, Iredell, Alamance, Stanly, Cabarras, Harnett, Johnson, Granville, Gates, Washington, Beaufort, Tyrrel, Onslow, Rockingham, Stokes, Buncombe, Madison, Pasquotank, Camden, Perquimans, Davidson, Caldwell, Hyde, Forsyth, Hertford, Cumberland, Robeson, and Carteret.

Charles Henry Foster, of Hertford, introduced the following ordinances, which were unanimously adopted, to wit:

BY THE PEOPLE OF THE STATE OF NORTH CAROLINA, AS REPRESENTED IN
CONVENTION AT HATTERAS, ON MONDAY, NOVEMBER 18, 1861.

*Be it ordained by this convention, and it is hereby ordained and published
by the authority of the same:*

I. That this convention, on behalf of the people of North Carolina, and acknowledging the Constitution of the United States of America as the supreme law of the land, hereby declares vacant all State offices, the incumbents of which have disqualified themselves to hold them by violating their oaths to support the federal Constitution.

II. That the office of governor of this Commonwealth, having been vacated by the death of John W. Ellis, and by the active treason to the Union of his constitutional successor, Acting Governor Clark, therefore, Marble Nash Taylor be hereby appointed and declared provisional governor of North Carolina.

III. That the constitution of this State, and its amendments, together with the statutes and laws thereof, as contained in the Revised Code, put in operation January 1, 1856, be declared continued in full force; also such subsequent acts of the general assembly as were not adopted in contravention of the national Constitution, or in derogation of its authority.

IV. That the ordinance of the convention which assembled at Raleigh on the 20th of May last, proclaiming the secession of this Commonwealth from the federal Union, such secession being legally impossible, is of no force or effect; and said ordinance, together with all other ordinances and acts of said convention or of the general assembly made and done in pursuance of the treasonable purposes of

the conspirators against the Union, is hereby declared, *ab initio*, null and void.

V. That whereas it is desirable that this State shall be represented in the federal Congress, and maintain her due weight in the councils of the Union, therefore the provisional governor be directed to issue certificates of election, as required by law, to such persons as may to him appear to have been regularly and duly elected representatives of the State in Congress; and furthermore, he is directed hereby to order special elections, as soon as practicable and expedient, in any district or districts now unrepresented. And, in view of the prevalence of armed rebellion and disorder in many portions of this Commonwealth, the governor is hereby authorized and directed to issue his said certificates of election upon presentation of such evidence as shall satisfy him of the fact of an election, dispensing with such forms as it may have been impossible or unsafe to comply with in the present disturbed condition of the country.

VI. That the governor be authorized and empowered to fill such official vacancies by temporary appointment, and to do such acts as, in the exercise of a sound discretion, he may deem expedient for the safety and good order of the State.

The convention then adjourned without day, subject to be reassembled upon call of the president.

GEORGE W. STOWE, *President.*

ZACHARIAH BURRAS, *Clerk.*

THE COMMONWEALTH OF VIRGINIA.

EXECUTIVE DEPARTMENT, *Wheeling, October 12, 1861.*

To the people of Virginia:

Whereas, several of the congressional districts of this State are unrepresented in the House of Representatives in the Congress of the United States, by reason of failure to elect on the fourth Thursday in May last, caused by armed men in rebellion against the Constitution and laws of the United States and of this State; and it being the right of the loyal inhabitants in each district to be represented in said House by a representative of their own appointing, the convention of Virginia, on the 20th day of August, 1861, passed an ordinance directing an election to be held on the fourth Thursday in October instant (24th) in every district of the State so unrepresented, and where vacancies exist. It is further made the law, by virtue of the ordinance aforesaid, that any person who is prevented from attending such election, by reason of the occupation of his own county by armed men in hostility to the government, that such voter may vote anywhere in his congressional district. It is further ordained that the election shall be conducted and the result ascertained, declared, and certified in the manner directed in the code of Virginia of the

edition of 1860. By the 11th section of chapter 7th of that code any two freeholders may hold an election directed by law at any place of voting, if no commissioner to superintend the same appear, and is willing to act, or if no commissioners have been appointed to hold the election.

Now, therefore, in consideration of the premises, I, Francis H. Pierpont, governor of the commonwealth of Virginia, do hereby entreat the loyal voters of this State to hold elections in their several districts on the day above mentioned, to the end that the people may be represented, the principle of representative government sustained, and the State have her due weight in the national legislature.

F. H. PIERPONT.

PHILADELPHIA, *November 11, 1861.*

DEAR SIR: Your favor of the 9th instant has just come to hand. In answering the same I would state that, although not a native born North Carolinian, I still have, for some time, been a loyal citizen of Guilford county, and as such am not only desirous, but shall feel highly honored by having so reliable and intelligent a gentleman as the Rev. M. N. Taylor as my representative, believing that his so acting would be satisfactory to all other loyal citizens of that county, as it would be to myself.

I feel, dear sir, that your cause will meet great success, and that the example you and your patriotic associates in the cause of liberty will lead others, now blinded by delusion, to a correct sense of their duty towards a government which has protected them, and under which they have received more blessings, civil and religious, than any which the wisdom of man has yet formed. The happiest moments of my life, believe me, dear sir, are those which permit me to express my gratitude for your kindness and consideration of my humble self.

May your exertions be successful shall ever be my supplications, while a doubt still remains. Please remember me as, very truly, your obedient servant,

N. S. HIGGINS.

HON. CHARLES HENRY FOSTER.

LIMA, N. Y., *November 15, 1861.*

DEAR SIR: I address you this line to request you to represent the Union men of Onslow county, North Carolina, in the State convention to organize a provincial government, having once been a resident of that county, and knowing something of the feeling there existing.

I am, respectfully, yours,

J. W. BAILEY.

Rev. M. N. TAYLOR.

PHILADELPHIA, *September 9, 1861.*

DEAR SIR: Shortly prior to the attack on Sumter I visited North Carolina to look after some large interests I have in Chatham and Union counties. I was very much interested in seeing the attachment then existing toward our government, and was assured by ex-Governor Morehead that it was certain to hold the State true to the federal government. He was disappointed, however; and I feel most confident that the apparent unanimity of the south is not real, but that an armed power of despotic character has subdued them. Whether recent occurrences have altered their views, of course, cannot be told, unless you can assure us of the state of things there, except that the confederate States government has circulated falsehoods. I am sure no power could change the intelligent men with whom I had intercourse in April last.

I have a brother-in-law in Cabarras county, who has a son in the confederate army; but I brought two other of his sons, (young men,) who are thoroughly Union men—out and out Union men. One of them is applying for admission to West Point Academy from North Carolina, and some promises have been made him in this matter.

I should like much to know what is the true state of feeling in the old State, and for this reason address you at this time. My brother-in-law is a manufacturer of cotton goods in Concord.

Yours, truly,

C. B. DUNGAN.

C. H. FOSTER, Esq.

PROCLAMATION BY THE GOVERNOR.

To the people of North Carolina:

On Monday, November 18, 1861, a provisional or temporary government for this Commonwealth was instituted at Hatteras, Hyde county, by a convention of the people, in which more than half the counties of the State were represented by delegates and authorized proxies. Ordinances were adopted by the convention declaring vacant all State offices, the incumbents whereof have disqualified themselves to hold them by violating their official oaths to support the Constitution of the United States, which North Carolina has solemnly accepted as the supreme law of the land, pronouncing void and of no effect the ordinance of secession from the federal Union passed by the convention assembled at Raleigh, May 20, 1861; continuing in full force the constitution and laws of the State as contained in the Revised Code of 1855-'56, together with all subsequent legislative acts not inconsistent with our paramount allegiance to the United States appointing a provisional governor, and empowering him to fill such official vacancies, and to do such acts as in his judgment might be required for the safety and good order of the State.

We have attempted no revolutionary innovation; we have made no

change in the organic law, or sought to overthrow or disturb any of the institutions of the State. In repudiating and resisting the wanton usurpation which has flagrantly defied the will, and now crushes the liberties, of the people of this Commonwealth, we act in pursuance of a sacred duty to North Carolinians and to that great republic, our common country, which invested them with the high dignity of American citizenship. We fulfil, moreover, an imperative obligation to God, to civilization, to freedom, and to humanity. We obey that cardinal maxim of sound government which affirms that the popular welfare is the highest law. The good and loyal men of North Carolina have been, for months past, without any domestic government which they were bound to respect; and the apparent consent of a large majority of the citizens to the armed power of the revolutionists and traitors who have unwarrantedly arrogated the governing authority of the State has been, not a voluntary and cheerful acquiescence, but a compelled and protesting submission, to a military despotism. The lives of citizens, and their rights of property and person, have had no protection amidst the anarchy, misrule, and disorder which have prevailed throughout the Commonwealth. It had, therefore, become necessary for the most ordinary interests of society, as well as in vindication of our loyalty to the national authority, that our municipal government, suppressed and overborne as it was by reckless and irresponsible usurpers, should be revised and maintained under the protection of the banner of the Union.

The temporary State government which we have accordingly set on foot has the approval in advance of thousands of good and faithful North Carolinians, and should command the prompt and cordial adhesion of all loyal citizens of the State. Of the desperate and ill-starred fortunes of the rebellion, and of its ultimate thorough suppression no rational man can entertain a doubt. It has the recognition of no nation under heaven, and the world's sympathies are unanimous in its condemnation. It is everywhere regarded as not only a revolt against a most beneficent and paternal government, but as assailing also law, order, progress, and all the great interests of mankind throughout the globe. It is an aggressive war upon popular liberty in the United States, and its claims can never be conceded short of an absolute surrender of the rights of man, and a craven recantation of the holy creed of freedom.

I therefore call upon all the good people of this Commonwealth to return to their allegiance to the United States, and to rally around the standard of State loyalty which we have re-erected and placed side by side with the glorious flag of the republic. I adjure you as North Carolinians, mindful of the inspiring traditions of your history, and keeping in view your true interests and welfare as a people, to rise and assert your independence of the wicked tyrants who are seeking to enslave you. Remember the men of Mecklenburg and the martyrs of Alamance, dead, but of undying memory, and endeavor to respect their valor and their patriotism.

[L. S.]

MARBLE NASH TAYLOR.

HATTERAS, November 20, 1861.

SEVENTH PRECINCT VOTE.

First Lieutenant Leahy, company H, ninth regiment New York volunteers, to provost marshal at Camp Wool.

At an election held on Thursday, the 28th day of November, one thousand eight hundred and sixty-one, at the house of Charles Foster, in the Trent precinct, in county of Hyde, being the seventh election precinct of said county, on closing the polls and counting the votes it appeared that, for representative in Congress, Charles H. Foster had sixty-two votes, (62.)

In testimony whereof we have hereunto set our hands, the said 28th day of November, 1861.

WILLIAM JENNETT, }
CHARLES FOSTER, } *Inspectors.*
HEZEKIAH F. BARNETT, J. P.

The following is a correct list of votes at an election for a representative in Congress for the second district of North Carolina, held at Trent precinct, in Hyde county, on Thursday, November 28, 1861.

- | | |
|-----------------------|-------------------------------|
| 1. W. B. Whidbee | 29. W. R. Jennett |
| 2. Fremon O'Neal | 30. Benjamin Robinson |
| 3. Martin A. Basnett | 31. Christopher Robinson, sr. |
| 4. Zachariah Basnett | 32. Josiah Robinson |
| 5. William Jonson | 33. A. A. Farrow |
| 6. Daniel Clark | 34. Ben. T. Fulcher |
| 7. James H. Whidbee | 35. Thomas Whidbee |
| 8. Absalom S. Clark | 36. Wiloughbee Whidbee |
| 9. William Whitson | 37. Jos. C. Jennett |
| 10. Denis Creed | 38. Aaron Barnett |
| 11. David W. Williams | 39. Major Whidbee |
| 12. William Clark | 40. Elisha Scharbrough |
| 13. H. W. Whidbee | 41. James Brinson |
| 14. James R. Johnson | 42. John N. Whidbee |
| 15. Tilmon F. Adkins | 43. Jabez Midyett |
| 16. Joseph Wilson | 44. Christopher Robinson, jr. |
| 17. David W. Farrow | 45. Edmond D. Midyett |
| 18. John B. Fulcher. | 46. Thomas F. Daniel |
| 19. Nasa S. Williams | 47. Abraham C. Farrow |
| 20. John L. Foster | 48. Silvester Robinson |
| 21. Lorenzo B. Farrow | 49. John B. O'Neal |
| 22. Jesse J. Foster | 50. Benj. F. Tolson |
| 23. Jacob A. Foster | 51. David W. Basnett |
| 24. William Adkins | 52. Oliver N. Barnett |
| 25. Joseph Whidbee | 53. R. R. Robinson |
| 26. W. J. Williams | 54. John B. Johnson |
| 27. Ezekiel Kinsey | 55. Asby C. Quidley |
| 28. Albin Fulcher | 56. Charles Foster |

57. William Jennett
58. Hezekiah F. Barnett
59. John N. Fulcher

60. William S. Saulter
61. Robert B. Basnett
62. Jeremiah Foster.

In testimony whereof we have hereunto set our hands, the said 28th day of November, 1861.

WILLIAM JENNETT, }
CHARLES FOSTER, } *Inspectors.*
HEZEKIAH F. BARNETT, *J. P.*

This may certify that C. H. Foster received all the votes cast in Kennekett precinct (ninety-one) at an election yesterday for Congress, and one other precinct unheard from yet.

M. N. TAYLOR.
G. W. STOWE.

NOVEMBER 29, 1861.

STATE OF NORTH CAROLINA, *Hyde county, to wit:*

Personally appeared before me, this eighteenth day of November, in the year of our Lord one thousand eight hundred and sixty-one, at Hatteras, Marble Nash Taylor, governor of the State of North Carolina, and took necessary oaths of office.

JETHRO A. MIDGETT,
Justice of the Peace.

The above is a true copy from the original.

C. A. SHIELDS,
Company K, 9th Regiment N. Y. Volunteers.

MILTON, *Caswell county, N. C., November 13, 1861.*

Rev. M. N. TAYLOR: In behalf of myself and the Union cause in this county, I hereby request you to represent the federal or loyal interest of Caswell in the convention to be held at Hatteras in a few days for the purpose of taking the necessary steps to rescue the loyal men from the power and ferocity of rebellion and tyranny in North Carolina. Hoping that you and your co-laborers in this noble cause may meet with abundant success, and receive the benediction of good men and the blessing of heaven, I remain, yours truly,

R. C. BOWLES.

Hon. C. H. Foster, member of Congress, and E. W. Carpenter, have a pass to Washington city on public business.

JOHN E. WOOL, *Major General.*

FORT MONROE, *November 30, 1861.*

The following is a list of voters at an election held at Hatteras, on Thursday, the 28th day of November, 1861, for the purpose of appointing a representative in Congress.

- | | |
|------------------------|-------------------------|
| 1. J. N. Rolison | 37. J. F. Oneal |
| 2. W. D. Austin | 38. J. W. Gaskins |
| 3. R. R. Quidley | 39. T. G. Willis |
| 4. W. W. Styron | 40. H. F. Oneal |
| 5. E. H. Rolison | 41. D. B. Stow |
| 6. Z. Burrus | 42. J. H. Willis |
| 7. W. T. Ballance | 43. W. B. Ballance, sr. |
| 8. C. F. Austin | 44. W. Stow |
| 9. M. Ballance | 45. G. S. Rolison |
| 10. Z. Gaskins | 46. J. Styron |
| 11. R. Styron | 47. R. B. Quidley |
| 12. John W. Gaskins | 48. L. B. Whidbee |
| 13. J. C. Odin | 49. C. O. Stow |
| 14. W. B. Austin | 50. A. W. Simpson |
| 15. F. N. Austin | 51. T. Bratchum |
| 16. T. Oneal | 52. H. D. Austin |
| 17. T. Willis | 53. N. Stow |
| 18. T. R. Styron | 54. W. G. Stow |
| 19. W. Scarbrough | 55. W. Gaskins |
| 20. J. Stow | 56. N. C. Wade |
| 21. P. Scarbrough | 57. T. Midgett |
| 22. J. B. Whidbee | 58. R. B. Ballance |
| 23. A. Burrus | 59. C. B. Stow |
| 24. H. B. Scarbrough | 60. W. D. Austin, sr. |
| 25. H. B. Gaskins | 61. G. W. Stow |
| 26. W. T. Austin | 62. E. W. Rolison |
| 27. C. Austin | 63. B. F. Peel |
| 28. J. E. Styron | 64. C. W. Peel |
| 29. T. Oneal | 65. J. F. Peel |
| 30. G. T. Willis | 66. W. Smith |
| 31. W. Scarbrough, jr. | 67. W. A. Smith |
| 32. J. F. Austin | 68. C. L. Odin |
| 33. W. B. Ballance | 69. S. M. Gray |
| 34. T. Scarbrough | 70. B. B. Gray |
| 35. J. Austin | 71. J. C. Gray |
| 36. A. Simpson | |

In testimony whereof we have hereunto set our hands the said 28th day of November, 1861.

ZACHARIAH BURRUS,
WALLACE S. BALLANCE,
Inspectors.

Sworn to before me this 28th day of November, 1861.

A. SIMPSON, [L. s.]
Justice of the Peace.

HATTERAS PRECINCT VOTE.

To the Provost Marshal at Camp Wool.

At an election held on Thursday, the 28th day of November, one thousand eight hundred and sixty-one, at the school-house at Hatteras, in the county of Hyde and State of North Carolina, on closing the poll and counting the votes it appeared that, for representative in Congress, Charles Henry Foster had seventy-one votes, (71.)

In testimony whereof we have hereunto set our hands, the said 28th day of November, 1861.

ZACHARIAH BURRUS,
WALLACE S. BALLANCE,
Inspectors.

Sworn to before me this the 28th day of November, 1861.

A. SIMPSON, [L. s.]
Justice of the Peace.

HARTFORD, *November 15, 1861.*

MY DEAR SIR: Your very kind favor of the 29th has been received. Your request that my father would write to you will, as I informed you in my other letter, be immediately attended to. My father is at present travelling through New York State on business connected with a patent; but I think that he would most gladly and willingly relinquish it if there is any prospect of reclaiming our native State. Father will be home to-morrow, and he will then, if he possibly can, come on to Hatteras inlet. Unless the state of his health deters him, you can rely upon him. If, however, he should be unable to come, he will either send one of my elder brothers or try and get some of the many persons from our county throughout the north to go. And here, in this connexion, I would suggest that a notice be put in some of the New York papers, calling upon all *loyal* citizens of North Carolina to be present at this convention. I know that my father is deeply interested in this work, and his patriotism and enthusiasm are only equalled by your own. More anon.

I am, most respectfully, truly yours,

F. C. HARMENS.

HON. CHARLES H. FOSTER.

CONFISCATION OF REBEL PROPERTY.

RESOLUTION

SUBMITTED BY

MR. CAMPBELL,

ON THE

Subject of the confiscation of rebel property.

DECEMBER 2, 1861.—Ordered to be printed, and further consideration postponed until the 10th instant at 1 o'clock, p. m.

Resolved, That in legislating to meet the exigencies of the present rebellion Congress should confiscate the property, slaves included, of all *rebels*, and protect the property and rights, under the Constitution and laws, of all loyal citizens.

JOHN G. DOWNEY,

Governor of California.

JOHN PRICE,

Secretary of State.

CONFISCATION OF REBEL PROPERTY.

RESOLUTION

ADMITTED BY

MR. CAMPBELL.

OF THE

HOUSE OF REPRESENTATIVES.

Passed by the House of Representatives, January 14, 1861.
1861. Printed at the War Office.

Resolved, That in legislation to meet the exigencies of the present rebellion Congress should consider the property claims of all rebels, and protect the property and rights of the loyal citizens and of all loyal citizens.

* F. F. LOW.

CERTIFICATE

OF

THE ELECTION OF F. F. LOW

AS

A third representative from the State of California.

DECEMBER 2, 1861.—Referred to the Committee of Elections, and ordered to be printed.

STATE OF CALIFORNIA,
Executive Department, Sacramento, October 18, 1861.

Whereas the secretary of state of this State has certified to me that, at the last general election held in this State, to wit, on the first Wednesday, being the 4th day, of September, A. D. 1861, for the election of State officers and representatives from this State to the thirty-seventh Congress of the United States, F. F. Low received the *third* highest number of the legal votes cast in this State over all the other candidates for representatives to the aforesaid Congress:

Now, therefore, I, John G. Downey, governor of the State of California, do hereby certify that (if it be determined by said Congress that this State is entitled to three representatives in the same) then, in such case, that the said F. F. Low has been and is duly elected one of the representatives from this State to the thirty-seventh Congress of the United States.

In testimony whereof I have hereunto set my hand and caused the great seal of the State to be affixed. Done at the city of Sacramento, State of California, the day and year above written.

JOHN G. DOWNEY,
Governor of California.

Attest:

JOHNSON PRICE,
Secretary of State.

F. F. LOW

CERTIFICATE

THE EFFECT OF F. F. LOW

1861

1861

1861

1861

1861

JOSEPH SEGUR

CERTIFICATE

ELECTION OF JOSEPH SEGUR

A Representative from the State of Virginia

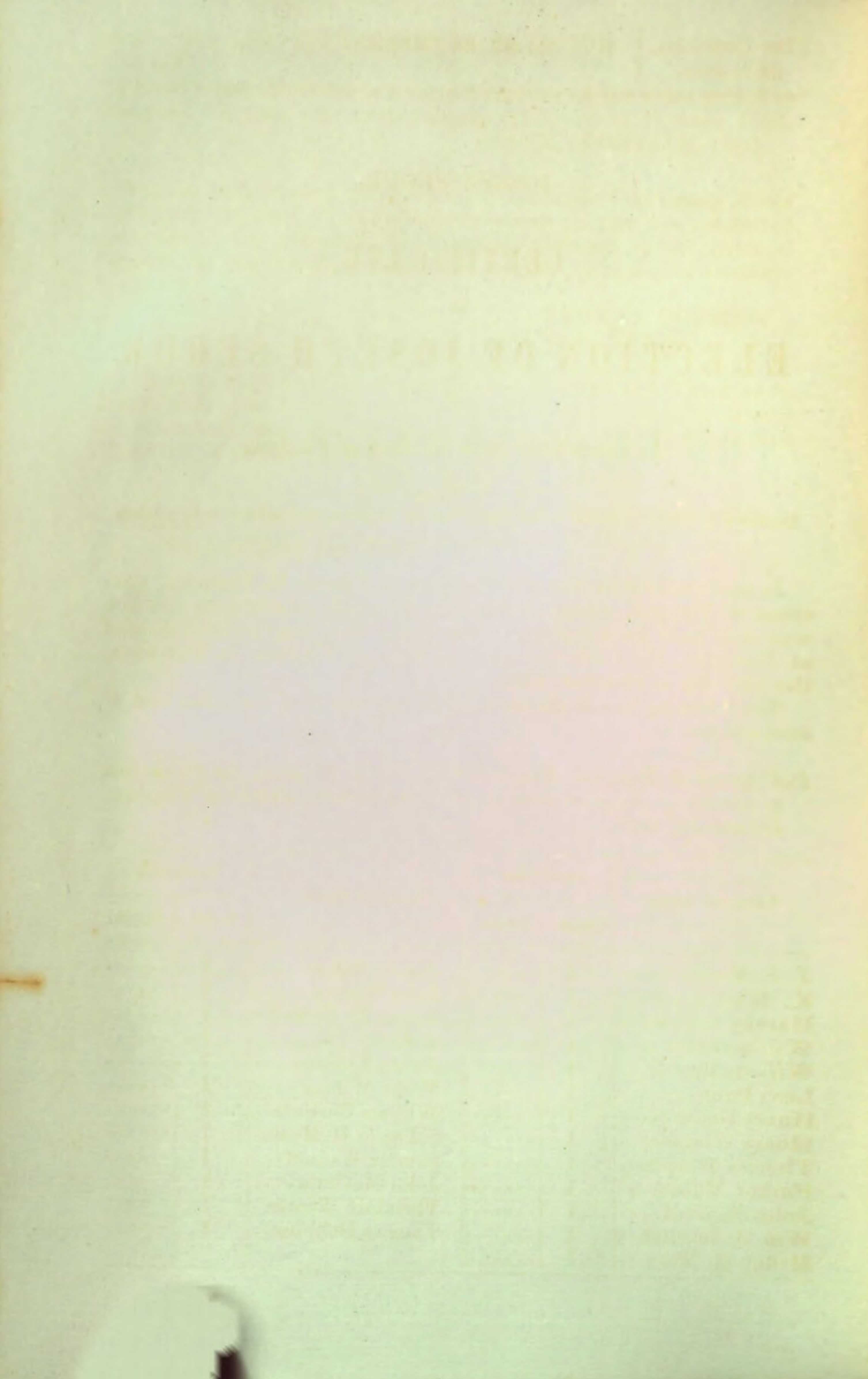
Resolved, That the following be printed, and added to the printed

the certificate with the presentation of Francis H. Pierpont, gov-
ernor of Virginia, a copy of which is herewith attached, as elected
and duly qualified for a representative in the first congressional district
of Virginia, Elizabeth City county, State of Virginia, on Thursday,
the 14th day of October, 1861.

This is likewise a duplicate copy of the returns of the votes cast at
the election.

Full record of Virginia, Elizabeth City county, Virginia, for the election
of members of Congress from the first congressional district of Virginia,
October 14, 1861.

Name of party	Candidates		Name of voter	Candidates	
	Agree	Disagree		Agree	Disagree
J. W. Moody	1	.....	Joseph Miller	1	.....
H. W. Taylor	1	.....	John Walton	1	.....
Harvey Robinson	1	.....	James B. Howell	1	.....
William H. Taylor	1	.....	R. Kelly	1	.....
William H. Taylor	1	.....	James L. Taylor	1	.....
John H. Taylor	1	.....	W. H. Wilson	1	.....
Henry H. Taylor	1	.....	William H. Taylor	1	.....
Henry H. Taylor	1	.....	Salmon P. Taylor	1	.....
Thomas H. Taylor	1	.....	Samuel Watson	1	.....
Patrick H. Taylor	1	.....	John H. Taylor	1	.....
John H. Taylor	1	.....	Theodore Taylor	1	.....
W. H. Taylor	1	.....	Thomas H. Taylor	1	.....
W. H. Taylor	1	.....			



JOSEPH SEGUR.

CERTIFICATE

OF

ELECTION OF JOSEPH SEGUR

AS

A representative from the State of Virginia.

DECEMBER 2, 1861.—Referred to the Committee on Elections, and ordered to be printed.

In conformity with the proclamation of Francis H. Pierpont, governor of Virginia, a copy of which is herewith attached, an election was duly held for a representative in the first congressional district at Hampton, Elizabeth City county, State of Virginia, on Thursday, the 24th day of October, 1861.

The following is a duplicate copy of the return of the votes cast at said election:

Poll opened at Hampton, Elizabeth City county, Virginia, for the election of member of Congress from the first congressional district of Virginia, October 24, 1861.

Names of voters.	Candidates.		Names of voters.	Candidates.	
	Segur.	Jacobs.		Segur.	Jacobs.
J. S. Moody	1	.....	Jacob Miller	1	.....
K. Whiting	1	.....	John Watson	1	.....
Harvey Robbins	1	.....	James E. Howell	1	.....
William Stacy	1	.....	S. Kelly	1	.....
William Howell	1	.....	James Latimer	1	.....
Levi Dunn	1	.....	Willis Wilson	1	.....
Henry House	1	.....	William Bartlett	1	.....
Henry Whitaker	1	.....	Solomon D. Myster	1	.....
Thomas Watson	1	.....	Samuel Watson	1	.....
Parker Millson	1	.....	John McCunn	1	.....
John Showard	1	.....	Theodore Tennis	1	.....
Wm. J. Burdick	1	.....	Thomas Dobbins	1	.....
Milton R. Muzy	1	.....			

I certify that the above is a correct register of the votes polled at Hampton, Virginia, this twenty-fourth (24th) day of October, 1861.

ALEX. WORRALL, *Clerk.*

We, the undersigned, freeholders of Elizabeth City county, State of Virginia, do hereby certify that the above election was conducted agreeably to the call of F. H. Pierpont, governor of the State of Virginia, by proclamation issued the twelfth (12th) day of October, A. D. 1861.

THOMAS DOBBINS.

T. S. TENNIS.

I hereby certify that the above Thomas Dobbins and Theodore S. Tennis were duly sworn by me as judges of election held at Hampton, Elizabeth City county, State of Virginia, this twenty-fourth (24th) day of October, 1861.

CAPT. N. M. BURLEIGH,

Provost Marshal at Camp Hamilton.

Witness:

WILLIAM BARTLETT, *Teller.*

Candidates		Name of voter	Candidates		Name of voter
Ballot	Count		Ballot	Count	
.....	1	Jacob Miller	.....	1	J. B. Moody
.....	1	John Watson	.....	1	N. Whiting
.....	1	James E. Howell	.....	1	Harry Robbins
.....	1	E. Kelly	.....	1	William Bandy
.....	1	James Palmer	.....	1	William Howell
.....	1	William Wilson	.....	1	Isaac Dunn
.....	1	William Bartlett	.....	1	Henry House
.....	1	Belmont D. Myster	.....	1	Henry W. Baker
.....	1	Samuel Watson	.....	1	Thomas Watson
.....	1	John McGinn	.....	1	Parker Milson
.....	1	Theodore Tennis	.....	1	John Shepard
.....	1	Thomas Dobbins	.....	1	Wm. J. Burdick
.....	1		.....	1	Milton R. May

BYINGTON vs. VANDEVER.

MEMORIAL

OF

LE GRAND BYINGTON,

CONTESTING

The seat of the Hon. Mr. Vandever, of Iowa.

DECEMBER 2, 1861.—Referred to the Committee of Elections, and ordered to be printed.

To the House of Representatives of the thirty-seventh Congress of the United States:

The undersigned, Le Grand Byington, resident of the State of Iowa, claims a seat in your honorable body as representative of the second congressional district of Iowa, upon the following state of facts, which, if disputed, he asks the opportunity to establish, viz:

1. That by the "code of Iowa" enacted in 1851, it was provided that the "general election" within said State was that at which "the members of the general assembly are regularly chosen."—(Sec. 237, page 42.)

2. That among other specified officers, "representatives to Congress" were to be chosen at such "general election" in 1852, and on alternate years thereafter.—(Sec. 240, page 44.)

3. That a new constitution having been adopted by said State, another election law was enacted thereunder, on the 23d day of March, 1858, by which "members of the general assembly" were to be elected on the *odd* instead of on the *even* years, as in 1859, 1861, &c., but in which no mention is made of representatives to Congress.—(Revision of 1860, sec. 470, page 79; and repealing "so much of the code of 1851 as conflicts with this act.")

4. That at the election of 1860, under the last named act, Hon. William Vandever was declared elected a member of your honorable body, for the second Iowa district, and as such took his seat at the extra session of July 4, 1861.

5. That on the day of , 1861, said Vandever was commissioned by the War Department of the government of the United States, to enlist and organize a regiment of infantry soldiers, for active service in the field, and on the day of , 1861, was sworn into the military service of the United States as colonel of said regiment, for the term of three years, or during the war, and from thenceforth has been, and still is, in actual military service of the United States, receiving the pay and emoluments of a colonel's commission.

6. That after said Vandever so entered the military service of the United States, on the day of , 1861, believing said Vandever's said seat in Congress was thus vacated, even if he had ever been legally elected thereto, the undersigned was publicly announced, within said district, as a candidate to be voted for at the "general election" of 1861, for representative of said district in the Congress of the United States.

7. That at said last named "general election" a large majority of the electors of said district who cast their votes for such representative voted for the undersigned for the said office of representative.

8. That many of the boards of county canvassers neglected or refused to canvass or return said votes, upon the pretext that the governor of said State had not notified said election by proclamation; although, as the undersigned insists, no such proclamation was required by the laws of Iowa.

9. That many of the counties of said district, however, did canvass and return said votes; but that the board of State canvassers refused to canvass said last named returns, upon what pretext the undersigned has not been advised; in consequence of which last named refusal the undersigned has not been furnished, as he should have been, with the usual certificate of election.

Upon the foregoing facts the undersigned insists that the said election of Mr. Vandever, in 1860, was irregular and unlawful; and that said election of 1861 was the regular and lawful election, under the laws of Iowa. But if mistaken in this assumption, then the undersigned further insists that the said enlistment of Mr. Vandever in the military service of the United States was, in law and in fact, a vacation of his said seat in Congress, and that the electors of said district possessed the right to elect a successor at the ensuing "general election," which could not be divested or postponed by a refusal of the governor to proclaim such election, and that they have properly exercised that right in the election of the undersigned at the general election of 1861.

LE GRAND BYINGTON.

IOWA CITY, *Iowa*, November 27, 1861.

MY DEAR SIR: I hand you, herewith, a memorial to the House of Representatives, which I desire you to present and have read, referred and printed, at your earliest convenience.

Uncontrolable engagements will prevent my being at Washington before about the middle of December.

Very truly yours, &c.,

LE GRAND BYINGTON.

Hon. S. S. Cox,

House of Representatives, Washington, D. C.

S. FERGUSON BEACH vs. C. H. UPTON.

MEMORIAL

OF

S. FERGUSON BEACH,

CONTESTING

The seat of Charles Upton as a representative from the State of Virginia.

DECEMBER 2, 1861.—Referred to the Committee of Elections, and ordered to be printed.

To the honorable the House of Representatives of the Congress of the United States:

The memorial of S. Ferguson Beach, of the city of Alexandria, in the State of Virginia, respectfully represents: That in consequence of the revolutionary action of the convention of Virginia, which assembled at Richmond in February last, elections for members of the thirty-seventh Congress, on the day fixed by law for such elections, were obstructed and prevented throughout most of the congressional districts of the Commonwealth.

Such was especially the case in the seventh district, composed of Alexandria and adjacent counties, where, owing to the presence of large military forces, and to the operation of other influences scarcely less powerful, not a single poll is believed to have been opened.

By an ordinance of the convention of Virginia, lately sitting at Wheeling, passed on the 20th day of August, 1861, it was ordained that in all those districts where elections had thus been prevented, as aforesaid, elections should be held on the fourth Thursday of October then next; and it was also thereby provided, that voters who should be unable to vote at their usual places, by reason of the presence of those in armed opposition to the government, should be allowed to vote in any county of their district.

Under the provisions of this ordinance, and in response to the proclamation of Francis H. Pierpont, governor of the Commonwealth, calling upon the loyal citizens, wherever it was practicable, to avail

themselves of said provisions, polls for the election of a representative for said seventh district were regularly opened in the city of Alexandria on the day appointed.

A small vote was cast, made up by voters from the counties of Alexandria, Fairfax, and Prince William, all, substantially, for your memorialist, as will appear by a regular and formal certificate of election which he now holds.

Your memorialist further represents, that upon the assembling of the present Congress, in extra session, on the 4th day of July, 1861, one Charles H. Upton, confessedly a citizen of, and voter in, the State of Ohio, at the presidential election in the November previous—neither then nor now a citizen of the State of Virginia—not even a *bona fide* inhabitant of Virginia, so far as can be ascertained, on the fourth Monday of May last appeared as the representative of said seventh district.

No one appeared to contest his right, since no person interested thereunto had any intimation whatever that any such right was pretended. On the contrary, it was matter of the most common notoriety that no election of a representative, either in form or substance, had been held in a single precinct of the district.

The urgent necessity for an immediate organization of the House precluded, at that time, any inquiry into minor matters, and the said Upton was accordingly admitted and sworn in as a member, without examination of his credentials.

The grounds upon which the said Upton claims to represent the loyal population of said district are entirely unknown to your memorialist and to all those who participated in the election lately held, on the fourth Thursday of October.

It is believed a slight examination will show that the claim rests upon no foundation whatever, and it is respectfully submitted that a decent regard for the rights and feelings of those interested requires that such examination shall be made.

On behalf, therefore, of them and of himself, your memorialist desires that the House, by its proper committee, will make due inquiry in the premises and dispose of the subject-matter in such way as the rights and interests of all concerned may appear to require.

S. FERGUSON BEACH.

ALEXANDRIA, *Virginia*, November 29, 1861.

ANDREW J. CLEMENTS.

MEMORIAL AND OTHER PAPERS

RELATIVE TO THE

ELECTION OF ANDREW J. CLEMENTS,

AS

A representative from the fourth congressional district of the State of Tennessee.

DECEMBER 3, 1861.—Referred to the Committee on Elections, and ordered to be printed.

STATE OF KENTUCKY,
Adair county, November 16, 1861.

To the Speaker and members of the House of Representatives of the Congress of the United States of America:

We, the undersigned petitioners, and volunteers in Colonel Ben. C. Grider's regiment of Kentucky volunteers, and all being citizens of the counties of Macon, Smith, and Jackson, of the State of Tennessee, and of the fourth congressional district in said last named State, would respectfully state and show unto your honorable body that we, in connexion with a large number of other citizens of the State of Tennessee and the district aforesaid, still remain loyal and true to the Constitution and government of the United States—the government of our fathers—and bear true allegiance to the federal authorities under said Constitution; and that, in consequence, and on account of our said loyalty, we have been compelled to fly from our native State, and leave our homes and families, and seek protection where we could best find it, under the flag of our once happy country; leaving all we have to the merciless ravages of secession bands of marauders to destroy, thereby leaving our families destitute of sustenance.

We would further state that although the governor and most of the officers of the State of Tennessee are disloyal and in open rebellion against the federal government, we pray that we, your peti-

tioners, and a large number of others, citizens of said State, still remaining loyal, may not be deprived of the privilege of being heard in your body by representation.

We further state that the regular time fixed by law for electing representatives to the federal Congress, in the State of Tennessee, was the first Thursday in August last, and, as we understood, the writs of election were duly issued for said election for said day; and said election was duly held on that day, in the said fourth district, for a member of the Congress of the United States, and Dr. Andrew J. Clements being the only candidate for the said federal Congress in said district; and we, (being citizens and voters in said district at that time,) together with a large number of other voters in said district, voted for the said Clements. We believe Doctor Clements to be the choice of a large majority of all the legal and loyal voters in said district, and that he was duly elected. But the governor and proper authorities of said State refuse to give said Clements a certificate of his election. They have failed to compare the votes, as the law requires—in many instances wholly suppressing it. In many places in said district the loyal voters were driven off from the polls and not permitted to vote. As all these wrongs were no fault of ours, or other loyal men, but are the fruits of rank rebellion, *we, therefore, in our own name, and in behalf of thousands of other loyal citizens of our said State and district*, pray that we may be heard and represented in your honorable body, through the said Clements, elected as aforesaid to the next ensuing Congress; in doing which you will ever receive the unfeigned gratitude of an oppressed, down-trodden, and almost ruined people, who love the institutions of their fathers, and are thus sorely oppressed for their loyalty and their striving for the perpetuation of the only government on earth that can give us protection. Hoping that you will grant our prayer, and permit our representative aforesaid to take his seat in your honorable body, we here subscribe our names.

W. A. Chitwood
Lafayette Harling
Wiley A. Whitley
W. M. Gregory
J. D. Kenley
S. C. Harriel
H. L. Pipkin
J. W. Huston
Wm. D. Brice
W. E. Moxey
W. W. W. Willson
P. F. Shrune
Isaac Elless
John Marsh
C. H. Marsh
Wm. C. Pipkin
D. W. Williams

P. L. Mador
H. M. Cook
John Garrett
David Low
Walter Kirby
King Robeson, sr
Claboron Kirby
T. J. Brice
C. H. Smith
Joseph Ruth
Claborn Borden
William Wooten
John Borden
Heard Jones
N. B. Whitley
James Brice
Neal Brice

L. R. Pipkin	H. H. Raglin
Mexico Sanders	Andrew Davis
R. L. Ragland	D. D. C. Smith
Samuel White	E. T. Raglin
Smith McDonal Pipkin	Meridith Davis
L. W. Massey	James Moore
M. A. Graves	J. P. Creasy
A. H. Morrow	W. B. Creasy
James Head	William Culom Camday
W. M. C. Gass	H. C. Fagg
William Massa	Peter Brean, sr
William Penington	L. J. Lenard
Samuel Garner	Richard Jones
A. J. Moss	Wm. W. Chitwood
William Strong	W. B. O. Jackson
John T. Wood	Green Key
W. R. Jones	William Harp
N. H. Penington	Obdiah Lenard
J. T. Tade	Nathaniel Borden
James M. Clarke	Henry Hunter
B. M. Johnson	G. W. Yorke
W. A. Barton	Shedrick Chitwood
W. M. Clarke	E. H. Jenkins
A. W. Short	Daniel Jenkins
J. J. Johnson	Peter Been
Ryley Hudson	Samuel Jones
Ely Barton	T. M. Bean
G. W. Smith	James Harp
Axem Whitley	King Robinson, jr
Miller Tolmon	George Jenkins
James Goad	Henry Robinson
Sampson Lee	J. Y. Borden
W. W. Jenkins	A. M. C. Raglin
W. C. Camday	W. W. Wooten
A. C. Moss	Joshray A. Lancaster
M. D. L. Yost	Kinchen Whitley
S. A. Moore	W. M. Robinson
W. N. H. H. Key	B. M. Johnson
John Austin	J. J. Johnson
Thomas Austin	H. T. Smith
Henry Mitchel	Silas Clarke
B. P. Jenkins	C. W. Short
G. W. Carter	D. C. Dixon
N. H. Penington	James Bean
Eli Barton	Andrew Bryan
D. B. Penington	A. B. Shover
F. E. L. T. Dixon	S. Bryant
Calvin McDonel	G. McKinnis
J. W. Henson	A. Meodor

John Strong
James M. Crabtree
W. H. Henley

Alex. Meodor
W. Roberson
Lafayette Horlin.

STATE OF KENTUCKY, *Adair County*:

We, the undersigned, know the above-named persons to be citizens of the State of Tennessee, and of the fourth congressional district of said State, and are at this time in the service of the United States army, and stationed at Camp Boyle, Adair county, Kentucky, this the 22d of November, 1861.

ALLEN J. ROARK, *Lieut. Colonel.*

WILLIAM J. HENSON, *Major.*

We, the undersigned, citizens and voters of the 4th congressional district of the State of Tennessee, and now in the army of the United States, stationed at Camp Boyle, in Adair county, Kentucky, state that on the first Thursday in August last, at a regular and lawful and constitutional election, held in said 4th district in said State, for members of Congress for the United States, that Dr. Andrew J. Clements, of Macon county, in said State and district of Tennessee, being a candidate in said district for the Congress of the United States at said election, we, the said citizens of the said 4th district, voted at said election for the said Clements for Congress as aforesaid, and that the said Clements was the only candidate at said election for said office, and that said Clements received at said election a majority of the votes of said county of Macon.

W. M. GREGORY.

D. D. C. SMITH.

VINSON B. WHITLEY.

STATE OF KENTUCKY, *Adair County*:

The above statement was this day sworn to and subscribed before me by W. M. Gregory, D. D. C. Smith, and Vinson B. Whitley.

Given under my hand this the 21st of November, 1861.

S. G. SUDDARTH,

Notary Public.

STATE OF TENNESSEE, *Macon County*:

I, Nathaniel M. Claiborne, sheriff of said county, do certify that at an election held by me, at the various election grounds in said county, on Thursday, the 1st of August, 1861, that A. J. Clements received for Congress four hundred and thirty-three votes.

Given under my hand this 13th of August, 1861.

N. M. CLAIBORNE, *Sheriff.*

We know that N. M. Claiborne was, on the first Thursday of last August, sheriff of the county of Macon, of the State of Tennessee, and that as such he held at that time and on that day an election in said county for the Congress of the United States.

Given under our hands November 21, 1861.

W. M. GREGORY.

D. D. C. SMITH.

VINSON B. WHITLEY.

STATE OF KENTUCKY, *Adair County* :

The above statement was this day made, subscribed, and sworn to before me, by W. M. Gregory, D. D. C. Smith, and Vinson B. Whitley.

Given under my hand this November 21, 1861.

S. G. SUDDARTH,

Notary Public.

STATE OF KENTUCKY, *Adair County* :

We, the undersigned citizens and voters of Jackson and Smith counties, in the fourth congressional district in the State of Tennessee, now belonging to the United States army and stationed at Camp Boyle, in Adair county, Kentucky, state, that on the first Thursday in August last, we (at a regular and constitutional election, held according to law, in said district, State, and counties, for a member to the United States Congress, which is to assemble on the first Monday in December next, in Washington city, in the District of Columbia,) cast our votes for Dr. Andrew J. Clements, of Macon county, as our choice for representative of the fourth congressional district of said State.

We also state that the said Clements was the only candidate for said office at said election. We further state that the governor and other officers of the State are in an open state of rebellion against the government of the United States, and will not report and give certificates of said election, but are endeavoring to suppress said vote.

NOVEMBER 18, 1861.

- | | |
|---------------------|------------------------|
| 1. Andrew Davis | 13. Thompson Penington |
| 2. J. P. Keith | 14. John Strong |
| 3. S. A. Moore | 15. A. J. Carter |
| 4. W. C. Camday | 16. G. W. Carter |
| 5. Nathaniel Borden | 17. Wm. B. Roddy |
| 6. L. B. Moss | 18. Alexander Denham |
| 7. Peter Bean | 19. John J. Price |
| 8. Obdiah Lenard | 20. John W. Ramsey |
| 9. J. M. Tolmon | 21. W. J. Stone |
| 10. W. W. Chitwood | 22. Wiley Carter |
| 11. H. T. Smith | 23. John Carter |
| 12. C. M. Smith | 24. Allen Dunan |

- | | |
|-------------------|------------------|
| 25. J. B. Wilson | 29. A. W. Smith |
| 26. R. H. Welch | 30. C. W. Short |
| 27. Daniel Gulley | 31. W. H. Henley |
| 28. Silas Clarke | 32. J. H. Goss. |

NOVEMBER 18, 1861.

We, the undersigned citizens and voters of Macon county, and the fourth congressional district of the State of Tennessee, and now in the army of the United States, stationed at camp-Boyle, in Adair county, Kentucky, state that on the first Thursday in August last, at a regular, and lawful, and constitutional election, held in said fourth district, in said State of Tennessee, for members of Congress for the United States, Doctor Andrew J. Clements being a candidate in said district for the Congress of the United States at said election, we, the said citizens of Macon county, voted at said election for said Clements for Congress as aforesaid; and that said Clements received in said county, at said election, a considerable majority of the votes cast in said county for said office.

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|---------------------------|-------------------------|
| 1. D. D. C. Smith | 32. A. L. Burns |
| 2. Vinson B. Whitley | 33. Charles Braton |
| 3. W. A. Chitwood | 34. Isaac Ellis |
| 4. W. A. Whitley | 35. L. R. Pipkin |
| 5. W. M. Robinson | 36. D. W. Williams |
| 6. Shadrach Chitwood | 37. R. L. Raglin |
| 7. Claborn Borden | 38. S. M. Pipkin |
| 8. David Law | 39. Carrel Pipkin |
| 9. W. W. Jenkins | 40. G. G. Meads |
| 10. Rolston Jenkins | 41. Lord Massey |
| 11. N. B. Whitley | 42. Richard W. Williams |
| 12. Lenard Jones | 43. Pleasant Chitwood |
| 13. James Goad | 44. E. T. Raglin |
| 14. King Robeson | 45. H. H. Raglin |
| 15. Marquis D. L. York | 46. Mocaco Sanders |
| 16. Alvin H. Mannow | 47. Neal Brice |
| 17. Richard Jones | 48. W. M. Gregory |
| 18. A. J. Pipkin | 49. James Brice |
| 19. J. N. Tolar | 50. Bradford Homel |
| 20. W. D. Maxey | 51. J. H. Meador |
| 21. Winstor Candler | 52. B. M. Fishburn |
| 22. Wm. W. Wilson | 53. W. M. Sampson |
| 23. G. W. Harrul | 54. J. R. Jones |
| 24. John Willis, senior | 55. Joel T. Cliburn |
| 25. Alford A. Cook | 56. J. W. Bandy |
| 26. B. B. N. Gillenwaters | 57. J. J. Bridgman |
| 27. John Garrett | 58. W. H. Wabrand |
| 28. P. F. Shrum | 59. Kinchen W. Whitley |
| 29. J. M. Pipkin | 60. N. M. C. Raglin |
| 30. Abel Loley | 61. James Gread |
| 31. Howell Horn | 62. John Hudson |

63. James M. Williams, W. A. 1888, A. B. Shaver
64. J. C. Williams, W. A. 1888, A. Shaver
65. L. S. Clements, H. W. 1876, James Good
66. Andrew Brynner, H. A. 1871, J. Good
67. James Good, H. A. 1871, J. Good

1871, 1872, 1873

and the names of the persons who have been elected to the office of clerk of the court in the year 1871, 1872, and 1873. The names of the persons who have been elected to the office of clerk of the court in the year 1871, 1872, and 1873 are as follows: James M. Williams, W. A. 1888, A. B. Shaver; J. C. Williams, W. A. 1888, A. Shaver; L. S. Clements, H. W. 1876, James Good; Andrew Brynner, H. A. 1871, J. Good; James Good, H. A. 1871, J. Good.

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|------------------------|------------------------|
| 68. James M. Williams | 69. J. C. Williams |
| 70. L. S. Clements | 71. Andrew Brynner |
| 72. James Good | 73. James M. Williams |
| 74. J. C. Williams | 75. L. S. Clements |
| 76. Andrew Brynner | 77. James Good |
| 78. James M. Williams | 79. J. C. Williams |
| 80. L. S. Clements | 81. Andrew Brynner |
| 82. James Good | 83. James M. Williams |
| 84. J. C. Williams | 85. L. S. Clements |
| 86. Andrew Brynner | 87. James Good |
| 88. James M. Williams | 89. J. C. Williams |
| 90. L. S. Clements | 91. Andrew Brynner |
| 92. James Good | 93. James M. Williams |
| 94. J. C. Williams | 95. L. S. Clements |
| 96. Andrew Brynner | 97. James Good |
| 98. James M. Williams | 99. J. C. Williams |
| 100. L. S. Clements | 101. Andrew Brynner |
| 102. James Good | 103. James M. Williams |
| 104. J. C. Williams | 105. L. S. Clements |
| 106. Andrew Brynner | 107. James Good |
| 108. James M. Williams | 109. J. C. Williams |
| 110. L. S. Clements | 111. Andrew Brynner |
| 112. James Good | 113. James M. Williams |
| 114. J. C. Williams | 115. L. S. Clements |
| 116. Andrew Brynner | 117. James Good |
| 118. James M. Williams | 119. J. C. Williams |
| 120. L. S. Clements | 121. Andrew Brynner |
| 122. James Good | 123. James M. Williams |
| 124. J. C. Williams | 125. L. S. Clements |
| 126. Andrew Brynner | 127. James Good |
| 128. James M. Williams | 129. J. C. Williams |
| 130. L. S. Clements | 131. Andrew Brynner |
| 132. James Good | 133. James M. Williams |
| 134. J. C. Williams | 135. L. S. Clements |
| 136. Andrew Brynner | 137. James Good |
| 138. James M. Williams | 139. J. C. Williams |
| 140. L. S. Clements | 141. Andrew Brynner |
| 142. James Good | 143. James M. Williams |
| 144. J. C. Williams | 145. L. S. Clements |
| 146. Andrew Brynner | 147. James Good |
| 148. James M. Williams | 149. J. C. Williams |
| 150. L. S. Clements | 151. Andrew Brynner |
| 152. James Good | 153. James M. Williams |
| 154. J. C. Williams | 155. L. S. Clements |
| 156. Andrew Brynner | 157. James Good |
| 158. James M. Williams | 159. J. C. Williams |
| 160. L. S. Clements | 161. Andrew Brynner |
| 162. James Good | 163. James M. Williams |
| 164. J. C. Williams | 165. L. S. Clements |
| 166. Andrew Brynner | 167. James Good |
| 168. James M. Williams | 169. J. C. Williams |
| 170. L. S. Clements | 171. Andrew Brynner |
| 172. James Good | 173. James M. Williams |
| 174. J. C. Williams | 175. L. S. Clements |
| 176. Andrew Brynner | 177. James Good |
| 178. James M. Williams | 179. J. C. Williams |
| 180. L. S. Clements | 181. Andrew Brynner |
| 182. James Good | 183. James M. Williams |
| 184. J. C. Williams | 185. L. S. Clements |
| 186. Andrew Brynner | 187. James Good |
| 188. James M. Williams | 189. J. C. Williams |
| 190. L. S. Clements | 191. Andrew Brynner |
| 192. James Good | 193. James M. Williams |
| 194. J. C. Williams | 195. L. S. Clements |
| 196. Andrew Brynner | 197. James Good |
| 198. James M. Williams | 199. J. C. Williams |
| 200. L. S. Clements | 201. Andrew Brynner |

POWERS OF THE PRESIDENT OF THE UNITED STATES
OVER THE ARMY AND NAVY.

PREAMBLE AND RESOLUTIONS

DECLARING THE POWERS OF

THE PRESIDENT OF THE UNITED STATES

OVER

The army and navy, and as to the province of the House of Representatives to control the same.

DECEMBER 3, 1861.—Ordered to be printed, and the further consideration postponed to Tuesday, the 10th December, at 1 o'clock p. m.

Whereas the Constitution has wisely withdrawn from Congress the command of the armies of the United States, and, after they have been called forth, organized, and disciplined under the rules which it is competent for Congress to make, and which it has made for the government of the land and naval forces, has placed that supreme command exclusively in the President of the United States: Therefore—

Resolved, That it is neither within the province of this House, nor would it be wise to lay down any rules whatever regulating or attempting to control any part of that chief command of our armies in the field, either in the matter as to what “military necessities” do or do not exist as to the treatment or use of slaves within any of the States, nor in any other matter whatever affecting the supreme command of the President.

Resolved, That whilst this House refrains from all attempts to assume any of the functions of the commander-in-chief of the army, and hereby expresses its confidence in the wisdom, prudence, and patriotism of the President, as indicated in the discharge of the most responsible and arduous duties of the present executive term, and its willingness to continue to him the untrammelled exercise of his powers as the commander-in-chief of the army and navy, yet the House deems it appropriate to express its earnest sense and conviction that in the prosecution of this war no resort, on the one hand, should be had to a plea of “military necessity” as a cover for any violation of any constitutional right of any citizen of the United

States, either in slaves or any other right of the citizen; nor, on the other hand, should any privileges or protections whatever be extended by our armies either to the title in slaves or in any property whatever, which is incompatible with the safety of the government itself or with the success of our arms in suppressing the rebellion; but all individual rights of property, when necessary, should, in the prosecution of the war, be made to yield to the paramount right of the government to re-establish the authority of the Constitution over all the people and States of the Union.

RESOLUTIONS OF THE NEW HAMPSHIRE LEGISLATURE

RESOLUTIONS

OF THE

NEW HAMPSHIRE LEGISLATURE,

ON THE

Subject of the War.

DECEMBER 4, 1861.—Read, laid upon the table, and ordered to be printed.

Mr. EDWARDS, by unanimous consent, introduced the following resolutions:

Resolved by the Senate and House of Representatives of the State of New Hampshire, in general court convened, That the contest now existing between the government and the disloyal people that have commenced an unjustifiable and treasonable war upon its constitutional authority should be regarded by all loyal men not as a sectional war, not an anti-slavery war, nor a war of conquest and subjugation, but simply and solely a war for the maintenance of the government, the suppression of rebellion, and the preservation of the *magna charta* of our liberty and national unity.

Resolved, That the State of New Hampshire pledges her resources for the integrity of the Union, for the support of the Constitution, and for the enforcement of the laws of the general government.

Resolved, That the Constitution is the supreme law of the land, and that no State has the right to secede therefrom and dissolve the Union which that Constitution was made to secure.

Resolved, That the duty of the general government to suppress all attempts to dissolve the Union is imperative, and cannot be evaded.

Resolved, That neither the President nor Congress can constitutionally entertain any proposition which has for its object the dismemberment of the government or the dissolution of the Union.

Resolved, That, in the language of Andrew Jackson, "The Federal Union must be preserved."

Resolved, That the secretary of the State be directed to send copies of these resolutions to the President of the United States, the presiding officer of each House of Congress, the governors of the several States, and each senator and representative of this State in Congress.

STANDING COMMITTEES

OF THE

HOUSE OF REPRESENTATIVES OF THE UNITED STATES,

THIRTY-SEVENTH CONGRESS, SECOND SESSION,

COMMENCING MONDAY, DECEMBER 2, 1861.

COMMITTEE OF ELECTIONS.

Henry L. Dawes	Of Massachusetts.
Daniel W. Voorhees	Of Indiana.
James B. McKean	Of New York.
Dwight Loomis	Of Connecticut.
Portus Baxter	Of Vermont.
George H. Browne	Of Rhode Island.
John W. Menzies	Of Kentucky.
Samuel T. Worcester	Of Ohio.
John Patton	Of Pennsylvania.

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Justin S. Morrill	Of Vermont.
John S. Phelps	Of Missouri.
Elbridge G. Spaulding	Of New York.
Erastus Corning	Of New York.
Valentine B. Horton	Of Ohio.
John L. N. Stratton	Of New Jersey.
Samuel Hooper	Of Massachusetts.
Horace Maynard	Of Tennessee.

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John Hutchins	Of Ohio.
James T. Hale	Of Pennsylvania.
John W. Noell	Of Missouri.
R. Holland Duell	Of New York.
Edwin H. Webster	Of Maryland.
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John Covode	Of Pennsylvania.
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Francis W. Kellogg	Of Michigan.
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Harrison G. Blake	Of Ohio.
Chauncey Vibbard	Of New Jersey.
Rowland E. Trowbridge	Of Michigan.
Elijah H. Norton	Of Missouri.
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Henry May.....	Of Maryland.
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Thomas B. Cooper.....	Of Pennsylvania.
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William Wall.....	Of New York.
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Luther Hanchett.....	Of Wisconsin.
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Joseph Baily	Of Pennsylvania.
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Cyrus Aldrich	Of Minnesota.

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Abraham B. Olin	Of New York.
William Allen	Of Ohio.
Gilman Marston	Of New Hampshire.
Hendrick B. Wright	Of Pennsylvania.
James S. Jackson	Of Kentucky.
W. McKee Dunn	Of Indiana.

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William G. Brown	Of Virginia.
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A. Scott Sloan	Of Wisconsin.
Goldsmith F. Bailey	Of Massachusetts.
Aaron Harding	Of Kentucky.
William A. Wheeler	Of New York.
George K. Shiel	Of Oregon.

LIST OF STANDING COMMITTEES.

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William Morris Davis	Of Pennsylvania.
John B. Steele	Of New York.
Bradley F. Granger	Of Michigan.
John Law	Of Indiana.
William G. Steele	Of New Jersey.
(Vacancy.)	

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William P. Cutler	Of Ohio.
Kellian V. Whaley	Of Virginia.
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George T. Cobb	Of New Jersey.

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Stephen Baker	Of New York.
Philip Johnson	Of Pennsylvania.
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John T. Nixon	Of New Jersey.
William Vandever	Of Iowa.
Charles H. Upton	Of Virginia.

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John A. Bingham	Of Ohio.
Alexander H. Rice	Of Massachusetts.
William G. Steele	Of New Jersey.
(Vacancy.)	

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Samuel R. Curtis	Of Iowa.
Chauncey Vibbard	Of New York.
William Mitchell	Of Indiana.
James S. Rollins	Of Missouri.

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 Edward McPherson Of Pennsylvania.
 Harrison G. Blake Of Ohio.
 Portus Baxter Of Vermont.
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 William D. Kelley Of Pennsylvania.
 Jacob P. Chamberlain Of New York.
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 Nehemiah Perry Of New Jersey.

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ON THE RULES.

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Ellihu B. Washburne	Of Illinois.
Schuyler Colfax	Of Indiana.
William A. Richardson	Of Illinois.
Robert Mallory	Of Kentucky.

ON THE PACIFIC RAILROAD.

James H. Campbell	Of Pennsylvania.
John B. Alley	Of Massachusetts.
Francis P. Blair, jr.	Of Missouri.
Samuel S. Cox	Of Ohio.
Edwin H. Webster	Of Maryland.
Richard Franchot	Of New York.
Isaac N. Arnold	Of Illinois.
Aaron A. Sargent	Of California.
(Vacancy.)	

ON CONTRACTS MADE FOR SUPPLIES FOR GOVERNMENT.

Charles H. Van Wyck	Of New York.
Ellihu B. Washburne	Of Illinois.
William S. Holman	Of Indiana.
Reuben E. Fenton	Of New York.
Henry L. Dawes	Of Massachusetts.
William G. Steele	Of New Jersey.
James S. Jackson	Of Kentucky.

ON THE LOYALTY OF GOVERNMENT EMPLOYÉS.

John F. Potter	Of Wisconsin.
Sidney Edgerton	Of Ohio.
Edward Haight	Of New York.
Samuel C. Fessenden	Of Maine.
Charles B. Calvert	Of Maryland.

ON THE ESTABLISHMENT OF A NATIONAL ARMORY WEST OF THE ALLEGHANY MOUNTAINS.

James K. Morehead	Of Pennsylvania.
John A. Bingham	Of Ohio.
Francis W. Kellogg	Of Michigan.
John L. N. Stratton	Of New Jersey.
Charles Delano	Of Massachusetts.
James S. Rollins	Of Missouri.
William Vandever	Of Iowa.
John W. Wallace	Of Pennsylvania.
William Kellogg	Of Illinois.

ON THE REDUCTION OF THE EXPENDITURES OF THE GOVERNMENT.

Frederick A. Conkling	Of New York.
William Kellogg	Of Illinois.
Samuel S. Blair	Of Pennsylvania.
John T. Nixon	Of New Jersey.
John W. Crisfield	Of Maryland.
George H. Brown	Of Rhode Island.
(Vacancy.)	

ON THE BANKRUPT LAW.

Roscoe Conkling	Of New York.
John Hutchins	Of Ohio.
Benjamin F. Thomas	Of Massachusetts.
John W. Noell	Of Missouri.
Robert McKnight	Of Pennsylvania.

PACIFIC RAILROAD.

MEMORIAL

OF THE

CENTRAL PACIFIC RAILROAD COMPANY OF CALIFORNIA.

DECEMBER 9, 1861.—Referred to the Select Committee on the Pacific Railroad, and ordered to be printed, with report of Chief Engineer.

MEMORIAL OF THE CENTRAL RAILROAD COMPANY OF CALIFORNIA.

To the honorable Senate and House of Representatives of the United States of America:

The undersigned memorialists hereby beg leave to represent to your honorable body the fact that they have recently acquired new, interesting, and important information with regard to the location of the western end of the Pacific railroad across the Sierra Nevada mountains; having discovered a new railroad route across the same, whereby there is effected a saving in distance of 184 miles, and in cost about ten millions of dollars, over the route upon which all the estimates of distance and cost have heretofore been made for the central route, while upon their newly-discovered line the heaviest grades and sharpest curves do not exceed the maximum grades and curves of the Baltimore and Ohio railroad.

The undersigned would further represent that the information thus gained is not of a vague or indefinite character, but is the result of a scientific exploration and reconnoissance upon three routes across the Sierra Nevada mountains, in central California, and of an actual instrumental survey upon this route made by railroad engineers, in the manner usual upon railroads, at a considerable amount of cost and labor. And that they have forwarded to Washington all the maps, profiles, details, &c., for the inspection of those interested in the matter, for the purpose of corroborating these statements.

The following is a brief enumeration of the advantages of this line :

1. It crosses the Sierra Nevadas and reaches the Truckee river in 123, and State line in 140 miles from Sacramento.
2. Big Bend of Truckee river, or Humboldt desert, is reached in 178 miles.

3. It crosses the State at nearly its narrowest width.

4. It pursues nearly a direct course from Sacramento to Big Bend of Truckee.

5. It reaches and forms an outlet for the business of Nevada Territory, the new silver mineral regions of Washoe, and the newly-discovered mineral regions of the Humboldt river, also of the Pyramid lake and Esmeralda mining districts.

6. It crosses the Truckee meadows at the head of Steamboat valley, which, with Washoe and Eagle valleys, connects with Carson valley, enabling a branch road with light grades to be built to any point on the Carson river.

7. It reaches the summit of Sierra Nevadas (or an elevation of 7,000 feet above Sacramento) in 81 miles from base of mountains.

8. It reaches eastern base of Sierra Nevadas in $11\frac{1}{2}$ miles from the summit.

9. It follows the valley of Truckee river without obstacle to Big Bend, or Humboldt desert.

10. It entirely avoids the second summit of the Sierra Nevadas.

11. Its maximum grades and shortest curves do not exceed those of the Baltimore and Ohio railroad.

12. The elevation of line is maintained continuously to the summit, there being no down grade running easterly to the summit.

13. Encounters no elevated plateau of table-land at summit.

14. Running to and from the single summit with maximum grades, has no extensive snow line.

15. Runs through extensive forests of timber suitable for ties, &c., for Pacific railroad.

16. Crosses no deep river cañons or gorges.

17. Its longest tunnel will not exceed 1,350 feet in length, and no shafting will be required.

18. Navigable waters of the Sacramento river at all seasons of the year its western terminus; Washoe and the Great Basin its eastern terminus.

19. Its eastern terminus is in proper position to connect with a railroad line through the Territories by either the Humboldt or Simpson routes.

20. Saving in distance over the route *via* Madelin Pass, as surveyed by Lieut. Beckwith, from Lassen's Meadows or Humboldt Crossing to California, 184 miles.

21. Saving in cost over ten millions of dollars.

22. Is advantageously located for a branch to Oregon.

23. Overcomes the greatest difficulties of the Pacific railroad.

Esteeming a knowledge of these facts of importance to your honorable body, in connexion with Pacific railroad matters, your memorialists respectfully present the same, with the report of their engineer, containing the details of such survey.

And, as in duty bound, we will ever pray.

CENTRAL PACIFIC R. R. CO. OF CALIFORNIA,
By THEODORE D. JUDAH,

Their accredited Agent.

REPORT.

ENGINEER'S OFFICE,
Central Pacific Railroad of California,
Sacramento, October 1, 1861.

To the president and directors of the Central Pacific Railroad Company of California:

GENTLEMEN: Agreeably to your instructions, I have completed the preliminary survey of a railroad across the Sierra Nevada mountains, from the city of Sacramento to a point on the Truckee river, at the eastern base of mountains; the results of which confirm the facts established by the barometrical reconnoissance made last fall.

A preliminary examination was made, and barometrical observations taken last fall upon three routes—one through Eldorado county *via* Georgetown, another *via* the present route, (Illinoistown and Dutch Flat,) and the third *via* Nevada and Henness Pass.

These observations demonstrated the existence of a route from Sacramento across the Sierra Nevadas, by which the summit could be attained with grades of 105 feet per mile; accordingly, field parties were organized early in the spring, and a thorough railroad survey made, the results of which are embodied in the following report, developing a line with lighter grades, less distance, and encountering fewer obstacles than found upon any other route or line hitherto examined across the Sierra Nevada mountains; and proving, by actual survey, that the difficulties and formidable features of this range can be successfully overcome for railroad purposes.

Among the objectionable features which render the Sierra Nevada mountains formidable for railroad operations are found—

First. *The great elevation to be overcome in crossing its summit, and the want of uniformity in its western slopes.*

It will be observed that in crossing a summit of 7,000 feet in height an average grade of 100 feet per mile can only be attained, with a distance or base of 70 miles. Should any irregularity of surface occur in this distance, the grade would be correspondingly lessened or increased, in conformity with such irregularity of surface.

When it is considered that the average length of the western slope of Sierra Nevada mountains, from summit to base, is only about 70 miles, and the general height of its lowest passes about 7,000 feet, the difficulty of locating a railroad line with 100-foot grades is correspondingly increased, as it becomes absolutely necessary to find ground upon which to preserve a general uniformity of grade.

In the present instance, the distance from base to summit, by railroad line, is 81 miles; the elevation of summit 7,000 feet above Sac-

ramento, and the maximum grade 105 feet per mile; showing a remarkable regularity of surface, without which the ascent could not have been accomplished with our maximum grades.

Secondly. *From the impracticability of river crossings in the mountains.*

To those unacquainted with the mountain topography of the western slope of the Sierra Nevadas, and accustomed to the lesser elevations and gentler slopes of the Atlantic States, it would be difficult to convey an adequate idea of the extensive proportions of the irregularities of surface which attach to these mountains.

The general course of the Sierras is northwesterly, and parallel to the line of Pacific coast.

This western slope being at right angles, extends therefore in a southwesterly direction, which is the general course or direction of the rivers and streams upon its western slopes.

Between a point opposite the city of Sacramento (about latitude $38\frac{1}{2}$) and Shasta (about 41 degrees,) this western slope is intersected by numerous rivers, having their sources near the summit of the Sierras. They are as follows: The South Fork of American, Middle Fork and North Fork, Bear river, Deer creek, South Fork of Yuba, Middle Fork, North Fork, the South, Middle, and North Forks of Feather river.

These rivers run through gorges or cañons, in many places from 1,000 to 2,000 feet in depth, with side slopes varying from perpendicular to an angle of forty-five degrees.

The ridges formed by these rivers are sharp, well defined, and in many places so narrow on top as to leave barely room for a wagon road to be made without excavating the surface of ridge.

The branches, also, of many of these rivers have worn out gorges as deep as those of the rivers, and present physical barriers to a line of communication, either crossing them, or extending in a northerly and southerly direction.

These rivers are generally made the dividing lines between mountain counties, which are of oblong shape, long and narrow—the counties of Eldorado, Placer, and Nevada, extending from base to summit of Sierra. The thoroughfares of travel extend into these counties along these ridges; the focus of travel for the large counties of Eldorado, Placer, Nevada, and Sierra, being Sacramento, (a portion of this travel, however, concentrating at Marysville.)

No wagon road exists across the Middle Fork of the American. The inhabitants of Eldorado county, in order to reach the divide between Middle and North Fork of the American by wagon, are obliged to proceed down to within eight or ten miles of the Sacramento valley, in order to obtain a crossing.

The towns of Forest Hill, Yankee Jim's, Todd's Valley, Michigan Bluff's, Bird's Flat, Sarahsville, &c., lying in the divide between the North and Middle Forks of the American, are reached by crossing the North Fork, about four miles above Auburn, at which point the road is excavated on the face of a steep side-hill above the river

cañon, which is about 1,000 feet high, closely following its bends and sinuosities; the hill upon each side being about four miles in length, or a total of eight miles in length; the grade for wagon road varying from 250 to 300 feet per mile.

Iowa Hill and Wisconsin Hill, although upon this same divide, are separated from the above-mentioned towns by two or three cañons or branches of the North Fork, running nearly parallel.

One of these cañons is deeper and more precipitous than the crossing of North Fork, above Auburn; the descent into the cañon being about one thousand five hundred perpendicular feet. A wagon road, wide enough for a single team, with occasional turning-out places, has been built across, but a distance of ten miles of road is rendered necessary in order to reach across a direct line of about three miles, the grades being between three hundred and four hundred feet per mile.

From Iowa Hill to Illinoistown and Nevada the cañons of Bear river, of Steep Hollow, Greenhorn, Wolf creek, and Deer creek intervene

Above Nevada, the South, Middle, and Main Yuba also intervene.

The present travelled stage road from Nevada to Eureka, &c., crosses South Yuba about eight miles from Nevada, the road descending in about two miles one thousand feet, and in the next five miles ascending two thousand feet to the top of ridge.

Thus it will be seen that, in order to reach the summit of Sierra Nevada, a railroad line must avoid the crossings of any of the cañons; for were it even practicable to follow down into them with a grade of one hundred feet per mile, it would still be necessary to retrace the line upon the opposite side, which would involve (in a cañon of, say, one thousand feet in depth) the additional length and cost of twenty miles of line of maximum grade, with the crossings of side ravines and tributaries.

The *present line* pursues its course along an *unbroken ridge, from base to summit, of Sierras*, the only river crossing in the mountains being Little Bear river (a tributary of Main Bear river, about three miles above Dutch flat,) which is crossed at an elevation of fifty feet, and will require only about fifty feet span of bridge.

Thirdly. *In its entirely avoiding the second summit of the Sierra Nevada mountains.*

A cross section of the main range of Sierra Nevada presents a profile showing two summits, with a range of elevated table-land lying between; thus, upon the profile of Lieutenant Beckwith's survey across the Sierra Nevada, *via* Madelin Pass, are shown two distinct summits, thirty-five miles apart, with a range of elevated table-land between them.

The present Placerville wagon road to Washoe also crosses these two summits; passing the first range *via* Johnson's Pass it descends into Bigler Lake valley, and ascending again crosses the second summit, *via* Daggett's Pass, into Carson valley.

Lake Bigler lies in this valley between the two summits—is about 35 miles long, and from 12 to 15 miles in width; is entirely surrounded by mountains and lofty peaks, excepting at one point on its western shore, where the Truckee river forms its outlet.

Running at first northwesterly about eight miles, then northerly about ten, thence northeasterly about twelve miles, the Truckee passes down between these two summits with a nearly uniform fall of about thirty-five feet per mile; thence sweeping round to the eastward, it passes through the second range or summit, at a depression where it seems to be entirely worn away down to the level of the river, thence pursuing its way through an extensive plain known as the Truckee Meadows; thence through the Washoe mountains to the Big Bend; thence northerly about twenty miles, finds its way into Pyramid lake.

At the Donner Lake Pass, where our line crosses the first summit of Sierra Nevada, the altitude of line is about 1,200 feet above the Truckee river. Donner lake lies immediately beneath, at a depth of 1,000 feet.

Two long side ranges or spurs enclose the lake and its valley, declining in height gradually to the Truckee river, about eight miles below.

Our line is carried down along the side-hill of the spur or range immediately above the lake, and upon its south side to the Truckee river, which point it reaches in a distance of eleven and a half miles of line, with a uniformly descending grade of 105 feet per mile from the summit.

The Truckee thus reached, all further difficulty of location ceases, as it pierces its way through all obstructions with a uniform descent, not exceeding forty feet per mile, to the Humboldt desert, which forms the sink of the Humboldt and Carson rivers.

Thus the second summit of Sierra Nevada and the crossing of the Washoe mountains are entirely avoided; and from the western base to the summit of Sierra Nevada the grade is uniformly ascending or level, there being no descending grade going eastward, while from the summit to Big Bend of Truckee, or Humboldt desert, a uniform grade is likewise maintained.

The prominent features of this line may be briefly enumerated as follows :

1. It crosses the Sierra Nevada mountains and reaches the Truckee river in 123, and State line in 140 miles from Sacramento.
2. Big Bend of Truckee, or Humboldt desert, is reached in 178 miles.
3. It crosses the State at nearly its narrowest width.
4. It pursues nearly a direct course from Sacramento to Big Bend of Truckee.
5. It forms a local road for the counties of Sacramento, Placer, and Nevada.
6. It commands and will perform the entire business of Nevada Territory, Washoe, and the silver mineral region.
7. It will also command the business of newly-discovered Hum-

boldt mineral district, Pyramid lake, Esmeralda, and Mono mineral districts.

8. It crosses the Truckee Meadows at the head of Steamboat valley, which, with Washoe valley and Eagle valley, connects with Carson valley, enabling a branch road, with light grades, to be built to any point on Carson river.

9. It reaches the summit (or an altitude of 7,000 feet above Sacramento) in 81 miles from base of mountain.

10. It reaches eastern base of Sierra Nevada in $11\frac{1}{2}$ miles from summit.

11. It follows the valley of Truckee river, without obstacle, to Big Bend or Humboldt desert.

12. It entirely avoids the second summit of Sierra Nevada.

13. Its maximum grades is 105 feet per mile, or less than those of the Baltimore and Ohio railroad.

14. The grades down the Truckee will not exceed 40 feet per mile.

15. The elevation of line is maintained continuously to the summit, there being no down grade running easterly to summit.

16. A uniformly descending grade is maintained from the summit easterly to the Truckee or eastern base.

17. Encounters no elevated plateau of table-land at summit.

18. Running to and from summit with maximum grades cannot have an extensive snow line.

19. Runs through extensive forests of pitch and sugar pine, fir, cedar, and tamarack, which latter two species of timber are abundant, and will furnish excellent cross-ties.

20. Crosses no deep river cañons or gorges.

21. Its longest tunnel will not exceed 1,350 feet in length, and no shafting will be required.

22. Shortest radius of curvature 573 feet.

23. Navigable waters of the Sacramento river at all seasons of the year its western terminus; Washoe and the Great Basin its eastern terminus.

24. At Big Bend of Truckee the line is in position to proceed *via* the Humboldt to Salt Lake, or follow the Simpson route to some point.

25. *Saving in distance* over route *via* Madelin Pass and headwaters of Sacramento, as surveyed by Lieutenant Beckwith, from Lassen's Meadows or Humboldt Crossing, 184 miles.

26. Saving in cost of Pacific railroad line, taking Lieutenant Beckwith's estimate from Lassen's Meadows or Humboldt Crossing, as compared with cost of present proposed line, in thirteen and one-half millions of dollars.

27. Reduces the time of passenger transit to and from Washoe to $8\frac{1}{2}$ hours. Passengers leaving Virginia Station at 5 a. m. will reach San Francisco the same evening.

28. Saving in cost of transportation of freight to citizens of Washoe or Nevada Territory one million of dollars per year.

29. Affords a market for low-class silver ores, (now thrown aside,) for shipment to Europe, from over 3,000 mining claims.

30. Is advantageously located for an extension to Oregon.

31. Completes first western link of Pacific railroad, overcoming its greatest difficulties.

GENERAL REMARKS CONCERNING LOCATION AND DESCRIPTION OF RIDGE OR DIVIDE.

This divide is the strip of land lying between the American river and its north fork, (on the south,) and Bear river and the South Yuba, (on the north.)

The American river unites with the Sacramento river at the city of Sacramento; Bear river unites with Feather river (a tributary of the Sacramento) about 30 miles north of the city of Sacramento.

The direction of the divide is northeasterly and southwesterly. Its width opposite Sacramento is about 30 miles.

The foot-hills of Sierra Nevada begin at Folsom, on the American, and at Johnson's ranch, on Bear river; the line of foot-hills running through or near Lincoln, (about 15 miles northerly from Folsom, and 10 miles southerly from Johnson's ranch,) forming a piece of land in Sacramento valley, between the foot-hills and Sacramento river, of about 30 miles in length and 20 in width. The ravine of Bear river, from Johnson's ranch to English bridge, (a distance of about 15 miles,) pursues nearly an easterly course, while the course of the ravine of American river, from Folsom, is nearly north, to a point within about 8 miles, (southeasterly,) from English bridge. Here the American river branches, and the ravine of its north fork, as well as that of Bear river, pursue a northeasterly course, but gradually approach each other to a point about 4 miles above Illinoistown, called Long ravine, where the two rivers are less than three miles apart.

At this point occurs the greatest depression on the ridge, and the greatest difficulties in location were found.

From Long ravine, the ravines of these rivers diverge somewhat, but are scarcely further than six miles apart at any point—the ravine of North Fork and its tributaries and branches continuing up to the summit.

Numerous branches and ravines extend northerly from the North Fork, rendering a location on that side extremely difficult, if indeed practicable, our line at Long ravine being about 1,200 feet above the bed of North Fork. The ravine of Bear river extends up about fourteen miles above Dutch flat, widening out near the source of Bear river into a beautiful valley, called Bear valley, about two miles long and one mile wide. Diminished in size to a small creek, Bear river passes through this valley, and a mile above is lost among the benches to the right. The ridge between Bear valley and North Fork of American is about 800 feet high.

Here occurs a singular freak of nature. The South Yuba, augmented by numerous large branches along its course, is seen emerging from impassable rocky cañons, and sweeping down through the head of Bear valley, it turns suddenly to the north, and pierces the ridge or divide lying north of Bear valley, forcing its way out to the

northward, between rocky walls, surmounted by peaks from 2,000 to 3,000 feet high.

There is little doubt that, at some former period, the waters of South Yuba flowed through Bear valley, and down the ravine of Bear river; and, indeed, it would be no difficult matter to turn the whole volume of South Yuba into Bear river at the present time.

The South Yuba Canal Company, who supply the Nevada divide with water for mining purposes, take their water from the South Yuba, at the head of Bear valley, bringing it down through Bear valley by the side of Bear river, with a grade of about ten feet per mile, being, at points, as near as 200 feet to Bear river, and not over fifteen or twenty feet above it. Thus it will be seen that the cañon of Bear river becomes and is the same as that of the South Yuba, which latter river now takes its place, the divide or ridge being now bounded by North Fork of American on the south, and South Yuba on the north.

The ravine or valley of South Yuba continues on to the summit of Sierra Nevada, and in Summit valley, within two miles of Summit, the river is a larger stream than is Bear river in Bear valley.

A barometrical examination of this route indicated that the top of ridge or divide could be reached at Clipper gap, near the head of Dry creek, $48\frac{1}{2}$ miles from Sacramento. From this point to Reservoir gap, (about $1\frac{1}{2}$ miles above Dutch flat, and 25 miles from Clipper gap,) it was found that the line must be carried on the top of ridge.

The line of top or crest of ridge being far from uniform, of course the lowest points or gaps in ridge become commanding points, and it was found necessary to carry the line from gap to gap, passing around the intervening hills upon their side slopes.

It was also found, upon reaching New England gap, (near the New England mills, about six miles from Clipper gap,) that to Long ravine, a distance of eight miles, the ridge was nearly level, the elevation of grade at Long ravine being only about 100 feet higher than at New England gap.

Also, that the ridge rose rapidly from Long ravine, eastward to the next gap, (called Secret Ravine gap.)

It was also found that from Reservoir gap ($1\frac{1}{2}$ miles above Dutch flat) the ridge rose too rapidly for one maximum grade, and that for the next 20 miles, to the bottom or valley of Yuba, the line must be carried on the main slope of Bear and Yuba rivers. It was thought, however, that the line could be carried up Cañon creek (a tributary of North Fork, with tolerably smooth side slopes,) to Dutchman's gap, about eight miles above, and there cutting through the gaps brought out on to Bear river side-hill.

Subsequent examination proved this to be impracticable. Cañon creek rising too rapidly for our grades, we were therefore compelled to carry the line immediately on to Bear river side-hill, and were fortunate enough to be able to avail ourselves of the side-hill of Little Bear river for that purpose.

Being on the top of ridge at Reservoir gap, we were enabled to

cross Little Bear river near its head, and to use its side-hill for an approach to Main Bear river.

The barometrical elevations also indicated that the Yuba could be reached about twenty miles above Dutch flat, at the head of its cañons, and the line carried along up its smooth, uniform bottoms for some distance; then, by taking to its south side-hill, Summit valley and summit reached with maximum grades.

The South Yuba, from this point (twenty miles above Dutch Flat,) called Yuba bottom, extends to the summit, a distance of sixteen miles, most of the way through a valley in some places 500 or 600 feet wide. The old Truckee emigrant trail follows down through the valley a portion of this distance, generally over a smooth natural road.

Were the fall of this river evenly distributed it would afford a uniform grade of a little less than 100 feet per mile to the summit.

Rising, however, from Yuba bottom (say half a mile at a grade of fifty feet per mile) the river cañons for half a mile at a steeper grade; thence for four miles its grade is about sixty feet per mile; it then cañons, rising about 250 feet in a mile, at a point called Slippery Rock cañon.

The river then rises gently for about three miles, and again rapidly for three miles, to Summit valley.

Through Summit valley (a distance of two and a half miles) its grade is scarcely twenty-five feet per mile, then rises rapidly again to the summit.

Inasmuch as the indications of altitude of the aneroid barometer proved lower than those of the true level, after continuing our line for six miles along Yuba bottom, we were obliged to retrace our steps and commence again near Yuba bottom, running up on south side-hill of Yuba, with maximum grade, into Summit valley, in order to attain a sufficient elevation to reach the summit.

Summit valley is a beautiful valley near the source of the Yuba, about two and a half miles long and three-quarters of a mile wide, yielding excellent pasturage for cattle, hundreds of which are driven there each summer.

From the summit, looking easterly, you appear standing upon a nearly perpendicular rocky wall of 1,000 feet in height.

Immediately below is seen a valley, from one to two miles wide, extending up from the Truckee river to nearly beneath your feet. Donner lake (about three and a half miles long by one mile in width,) occupies the upper portion of this valley, and its outlet is seen pursuing its course down to a junction with the Truckee. Two long ranges or spurs are seen on either side, parallel with and enclosing the lake, reaching from the summit to Truckee river. Immediately beyond the river is seen the second summit of Sierra Nevada, while still further in the distance the Washoe mountains are plainly visible.

Passing the summit our line is carried down upon the side-hill of the range, on south side of Donner lake, descending with the maximum grade for about eleven miles.

The distance, in a direct line, from summit to Truckee river, does

not exceed eight miles; but we fortunately encountered two long ravines, with smooth side slopes, which, with the sinuosities of side-hill, gave about three additional miles of distance, enabling us to reach the Truckee with maximum descending grades.

PARTICULAR DESCRIPTION OF LINE.

Commencing at the city of Sacramento, the line will cross the American river about half a mile above Lisle's bridge; thence pursuing a northeasterly course, for twenty-five miles, across the Sacramento valley, it reaches the town of Lincoln, or intersection with the California Central railroad, which point is at an elevation of 140 feet above the top of the levee at Sacramento.

From Lincoln the line follows up an indentation or bay, in the foot-hills, with grades not exceeding 50 feet per mile (passing half a mile north of Virginia) to Barmore's, thirty-one miles from Sacramento, (elevation 340 feet above Sacramento,) from which point grades of 84 feet per mile are first used.

Continuing up on the southerly bank of Doty's ravine, (passing about one mile north of Gold hill,) the line crosses Doty's ravine, running down the north side of same for about one-quarter of a mile, with ascending grades; thence, turning to the right, it crosses the travelled road near Dutch Colonel's House, and passes up the upper portion of what is known as Shipley ravine.

Thence crossing northeastly corner of the old Boyen ranch, it follows northerly, (near the line of what is known as Sailor's Ravine ditch,) at the base of the foot-hills, to Sailor's ravine.

Running up Sailor's ravine about one-third of a mile, the line crosses the same, and, turning to the left, it passes about 300 feet east of Moore's house, continuing on, up a branch of Sailor's ravine, to a point called Bar summit, having attained an elevation of 660 feet above Sacramento.

Thence, winding about between the heads of small ravines, it crosses near the head of Taylor's and Sedergest ravines, and passing about two-thirds of a mile north of Taylor's house, reaches the side-hill of Dry creek.

Passing up the south side-hill of Dry creek, the line follows up two tributary ravines a short distance to a favorable crossing, and in a short distance further strikes another tributary called Deadman's ravine.

This ravine presenting a smooth side-hill, the line continues up the same about half a mile, to a favorable point, where it crosses, at a height of about 45 feet.

Pursuing its course down the east side-hill of Deadman's ravine, it strikes again the main side-hill of Dry creek, following the same to the point where it breaks from its smooth, uniform valley into rocky cañon; thence up Dry creek, about two and a half miles, to the Auburn and Nevada stage road.

From the Nevada stage road to Clipper gap (a distance of six miles) the line follows up the valley of Dry creek, with grades vary-

ing from 50 feet to 105 feet per mile. At one point on the profile a grade of 116 feet per mile will be observed. This is the grade upon the line as run; but a slight alteration of line will reduce it to 105 feet.

From point where Dry creek cañons to Clipper gap, the line passes up and near to Oert's house, Page's Redwines, passing under the flume of Bear River ditch, and crossing Wyman's turnpike and Auburn and Nevada stage road at Hawes's store.

Thence, passing over lands and near dwellings of Welles, Gilbert, Cook, Kingsley, Cogswell, Watson, Buckley, and Neil, it reaches Gasorway's, or Golden Gate Hotel, passing about 25 feet in front of Gasorway's house.

Here the stage road forks, one branch following up a side ravine to the left, over Tunnell hill, and *via* Empire Mills to Illinoistown, while our line continues to the right, up Dry creek, about a mile further, passing about 200 feet in front of Predmore's house.

Here, instead of following Dry creek further, (it rising too rapidly for our grades,) we cross a gap to the right, called Clipper gap, and run up the north side-hill of Clipper ravine, a tributary of North Fork of American, to Wild Cat summit, crossing several short, steep side ravines.

Passing through Wild Cat summit, about one-quarter mile south of Widow Hawes's house, we pass around Hawes's hill, and, curving to the left, cross the main road and pass up a smooth ravine to the top of the ridge, at a point called Applegate summit.

A short distance further on the line passes through Evergreen gap, crossing the divide again at Baney's gap, from which point it curves round on side-hill (on North Fork side) to Star House gap, near the Star House.

Here the line crosses Star House gap (and the travelled road) about 50 feet high, passing up very nearly on the top of divide to the head of Applegate ravine, which runs into Bear river, this point being called New England gap.

From New England gap the line passes out upon north side-hill of North Fork.

Crossing the travelled or stage road, it runs along above the same, and about 500 feet above New England mills, through peach orchard of Murphy, through Manzineta and Chaparrel gaps, and over Sugar Loaf summit to Lower Illinoistown gap, at the point where upper stage road crosses the gap, about one and a quarter mile below Illinoistown.

Crossing this gap, about 30 feet high, the line continues on about half a mile further, over a broken country, to a point called Bear River gap, where it turns abruptly to the left, with maximum curve, and crosses the ridge with a tunnel of 500 feet in length, emerging on the south side-hill of Bear river, along which it pursues its course to Storm's gap and Long Ravine gap, leaving Illinoistown about one mile to the right.

Here was found the greatest difficulty in location; Long Ravine

gap being an unusually low depression, the ridge beyond rising quite rapidly to attain its average elevation.

Here the line crosses gap, about 70 feet high, and curving to the right follows the-side hill of Rice's ravine (leading to North Fork) for about one mile, encountering a succession of short, steep, abrupt side ravines, to Cape Horn, which is a bold, rocky bluff, nearly perpendicular, and 1,200 feet high, above the North Fork of American.

Passing round the face of this bluff, about 200 feet below the table above, we strike the side-hill of Robber's ravine, which runs parallel to Rice's ravine, and continues up along the side-hill of same for about $1\frac{1}{2}$ mile, crossing Oak summit, and passing about three-quarters south of Madden's toll-house, through Trail summit.

From this point the line follows along the face of side-hill above North Fork, striking Secret ravine, along which it runs for about one mile, when, turning to the left, it passes up a tributary side ravine to its head, the line striking a point about two hundred feet south of stage road, one mile south of Secret town.

Running thence, alongside of road nearly a mile, it crosses the same, and passing between Everhart's house and barn, at Secret town, it reaches the head of Secret ravine, or Secret Town gap, crossing it with trestling, about 50 feet in height.

Turning to the left, the line now passes north of Cold Spring mountain, (on Bear river side,) and for two miles encounters a succession of steep side ravines, where some of the heaviest work on the line will be found. Two tunnels will be necessary on this piece of line, each about 600 feet in length.

Leaving the side-hill again, the line strikes a long and nearly level bench, about two miles in length, extending up nearly to Dutch flat.

This bench is the well-known gravel ridge which extends along the slopes of the Sierras at about this elevation, and on which are situated the mines worked by the hydraulic mining process.

Extending up this ridge to within about one mile of Dutch flat, the line again takes to side-hill to the left, running near to Strong's cabin, Brickell's steam saw-mill, Dutch Flat steam saw-mill, to the Dutch Flat Water Company's large reservoir, about one $1\frac{1}{2}$ mile above Dutch flat.

The town of Dutch Flat lies on Bear River side-hill, about half-way down to Bear river, the line passing about half a mile in the rear, and about 300 feet higher than the town.

At this last-named reservoir, which is upon the top of ridge, called Reservoir gap, we leave the crest of ridge for the last time, it rising too rapidly to be available for a railroad line at our maximum grades.

Turning to the left, the line now runs at nearly a level grade, about $1\frac{1}{2}$ mile further to Little Bear river, which stream it crosses just above the saw-mill, near Widow Homer's ranch.

Pursuing its course down the north side-hill of Little Bear river, it departs at Elmore hill, passing round the same, and enters upon the side-hill of Bear river.

The river gorge at this point is about 1,500 feet deep; our line being about 500 feet below the top of ridge, and from 1,000 to 1,200

feet above the river. Its side-hill is steep, rocky, and marked by many abrupt indentations and corresponding salient points.

The line was carried *round* most of these points ; but, upon a final location, it will probably be found advisable to run through the sharp points with short tunnels—the longest of which will be 1,350 feet—none of them, however, requiring shafting.

The line passes up this side-hill of Bear river, (the grade line being nearly parallel with the crest or top of ridge, and from 500 to 700 feet below the same,) crossing through Zerr's ranch, (about 600 feet north of his buildings,) striking the lower end of Bear valley, about 200 feet high, on its south side-hill.

Continuing on for two miles, it leaves the head of Bear valley, at an elevation of about 350 feet on side-hill above the same, crossing the head of Bear river, (which is here but a small creek,) following it up to its source, which is in a marshy lake, about $1\frac{1}{2}$ mile above Bear valley.

It will be observed on the profile that from Zerr's ranch to head of Bear river a grade line is indicated, running about 100 feet higher on the side-hill.

In locating the line as run, the intention was to cross Bear river, and continue on the side-hill of the main gorge to Yuba river, (near head of South Yuba Water Company's canal,) keeping up on main side-hill of South Yuba to Yuba bottom; but, upon examination, this proved to be impracticable, the Yuba above Bear valley running in deep rocky cañons, with perpendicular rocky walls of granite, too rugged in their character to admit of the location of a line over them.

It therefore became necessary to carry the line on to a bench above and south of the Yuba river, and nearly at the base of a main ridge—a line from Zerr's ranch to this point being practicable at our maximum grade, the only change necessary being to make the location a little higher on side-hill.

Our present line passes about 100 feet to the left of Jew David's cabin. On the location, as changed, it will pass a short distance in the rear of the same.

Continuing on, the line pursues the general course of Yuba river, about six miles further, to the point where old Truckee emigrant trail leaves Yuba bottom to ascend on the main ridge to the south (which point is 19 miles above Dutch flat by trail, and about $22\frac{1}{2}$ miles by our line), called Yuba bottom.

This point is at the head of the lower cañons and falls, between Yuba bottom and Bear valley.

In a subsequent location, it will be necessary to run the line between these two points, (viz: head of Bear river to Yuba bottom,) a little lower down on side-hill, as indicated on profile, for the following reasons: Fearing that the elevation of the Yuba bottom might prove too high, the line was run from head of Bear river, at our maximum grade, in order to gain as much elevation as possible. But on reaching Yuba bottom, it was found that this gave more elevation than was necessary ; therefore the last half mile of line was run down on to Yuba

bottom. The last elevations show that a grade of 80 feet per mile can be obtained from head of Bear river to Yuba bottom.

From this point (Yuba bottom) the line follows the river for about one mile, passing through a short cañon, and emerging at very near the level of water surface in river (called Hall's cañon.)

From this point the line was first run for about six miles up the river valley, taking to side-hill at the two upper cañons, the line being carried up to the upper ford, at head of Wilson's cut-off; but finding that the summit could not be reached without increasing grade on the remaining distance, our parties proceeded to summit, from which a line was run down on south side-hill of Yuba, at maximum grade, striking into the valley line, at head of first small cañon (about one mile above Yuba bottom) called Hall's cañon.

The location, therefore, is carried from Hall's cañon, on south side-hill of Yuba, at maximum grades, into lower end of Summit valley, (about $3\frac{1}{2}$ miles below summit of Sierras,) crossing the old Truckee emigrant trail, near Kidd's reservoir, about half-way up to the top of bridge, the line striking the lower end of Summit valley, about the level of Yuba river; running thence straight across Summit valley, about two miles, at a grade of about 25 feet per mile, to a point on the south side of Summit valley, near Cook's old cabin, the line takes to side-hill on the right, and in $1\frac{1}{2}$ mile further reaches the summit of Sierras, with a cutting of about 50 feet.

By commencing the last-named ascent a little further back in Summit valley, the summit can be reached with maximum grades without any excavation. The elevation of surface at summit is 7,027 feet above top of levee at Sacramento.

DESCENT ON EASTERN SIDE OF SIERRA NEVADA.

Pursuing its course from the summit easterly, the line commences its descent with maximum grade, and, passing to the right, is carried for next two miles over a steep, rocky side-hill, on which will be found quite heavy rock cutting; thence, turning abruptly to the right, it enters upon side-hill of Strong's ravine, and, running up the same, about one mile, crosses over, and is carried down over a smooth side-hill, to a point 600 feet higher than the southwest corner of Donner lake; thence pursuing its course along the side-hill for about three miles, it encounters Coldstream ravine, and runs up the same a little over a mile.

Crossing Coldstream, the line follows along down its south side-hill to within about $\frac{1}{4}$ mile of the Main Truckee, where, turning to left, it crosses the valley of Donner creek, accomplishing the descent in about $11\frac{1}{2}$ miles of downward maximum grade. Thence the line was carried about five miles down the valley of Truckee river, and the survey terminated at a point 128 miles from Sacramento.

The object of this survey being to accomplish the crossing of the Sierras with a railroad line, it was considered unnecessary, at this time, to extend the survey any further down the Truckee river; barometrical elevations were taken from our line up the Truckee

river to Lake Bigler, and also down the same to the lower end of Truckee meadows, showing its average fall to be only about 35 feet per mile.

I also carried a series of observations down Steamboat valley to Steamboat springs; thence across the Washoe mountains (*via* Virginia, Flowery, and Six Mile cañon) to the Carson river; thence down the same to Fort Churchill—a profile of which is shown on the small general profile of grades.

A continuation of our line down the Truckee to Big Bend follows the same, from terminus to survey, 13 miles to Neil's ranch, or Hennes road; thence 7 miles to Stout's crossing of Truckee; thence through the Truckee meadows and across head of Steamboat valley 8 miles to Stone's crossing or western base of Washoe mountains; thence 23 miles, through Washoe mountains to Big Bend of Truckee, or edge of Humboldt desert, making total distance about 178 miles.

No obstacle exists, and a line, with light grades over exceedingly smooth surface, can be carried from Stout's crossing of Truckee, up Steamboat valley, to its head; thence through Washoe valley into Eagle valley, which opens into Carson valley; thence down the Carson river to Fort Churchill, or edge of desert, making, however, a longer line than that down Truckee.

GRADES.

The following table of grades extends from Lincoln (25 miles from Sacramento, and 6 miles from westerly base) to terminus of survey, (or four miles beyond eastern base of mountains,) or includes 11 miles beyond base of mountains. The average grade from Sacramento to Lincoln (25 miles) being six feet per mile.

Table of grades.

Length of plane, feet.	Grade ascends per mile.	Grade descends per mile.	Length of plane, feet.	Grade ascends per mile.	Grade descends per mile.	Length of plane, feet.	Grade ascends per mile.	Grade descends per mile.
3,000	9	-----	11,000	105	-----	10,500	105	-----
3,000	53	-----	4,000	53	-----	1,000	53	-----
1,000	Level.	-----	6,750	105	-----	500	Level.	-----
3,000	45	-----	18,250	Level.	-----	5,000	79	-----
4,500	Level.	-----	3,000	105	-----	3,000	105	-----
6,500	45	-----	1,000	Level.	-----	3,000	79	-----
4,000	36	-----	6,000	36	-----	38,000	105	-----
4,300	53	-----	13,500	Level.	-----	2,000	Level.	-----
6,300	79	-----	17,500	105	-----	1,000	53	-----
3,200	Level.	-----	1,000	Level.	-----	25,000	79	-----
500	53	-----	3,500	105	-----	2,750	26	-----
12,700	84	-----	1,000	Level.	-----	3,500	105	-----
3,300	Level.	-----	3,500	105	-----	2,000	Level.	-----
5,000	84	-----	1,000	53	-----	57,500	105	-----
6,000	65	-----	2,500	105	-----	1,750	53	-----
7,100	84	-----	2,000	Level.	-----	2,500	Level.	-----
1,300	53	-----	13,000	105	-----	13,750	105	Summit.
2,500	105	-----	1,000	Level.	-----	45,000	-----	105
1,800	26	-----	1,000	53	-----	1,750	-----	Level.
4,000	75	-----	4,000	Level.	-----	15,250	-----	105
1,000	53	-----	172,500	105	-----	2,500	-----	Level.
1,000	75	-----	1,250	Level.	-----	6,500	-----	53
1,700	105	-----	1,000	79	-----	3,200	-----	39
2,500	75	-----	1,000	Level.	-----	2,750	-----	Level.
2,000	105	-----	4,000	53	-----	3,500	-----	39
2,000	65	-----	14,000	105	-----	1,000	-----	53
3,000	105	-----	3,000	53	-----	2,000	-----	39
15,000	116	-----	4,000	79	-----	-----	-----	-----

Summary of grades.

	Grade—feet per mile.	Miles ascending.	Miles descending.	
	9	0.56	-----	
	26	0.86	-----	
	36	1.89	-----	
	39	-----	1.04	
	45	1.80	-----	
	53	5.08	1.42	
	65	1.53	-----	
	75	1.38	-----	
	79	8.39	-----	
	84	8.03	-----	
	105	43.08	11.41	
	116	2.84	-----	
	Level.	11.19	1.33	
Total distance from Lincoln to Summit.		87.63	15.20	
Deduct 7 miles beyond base.....		7.00	4.00	Deduct beyond base.
Leaves distance western base to Summit.		80.63	11.20	Summit to eastern base.

From which it appears that upon the western slope :

Total distance from western base to summit is.....	80.63 miles.
Number of miles of ascending grade 116 feet per mile }	2.84 "
Number of miles of ascending grade 105 feet per mile }	43.08 "
Number of miles of ascending grade 34 feet per mile..	8.03 "
Number of miles of ascending grade 79.75 feet per mile	9.77 "
Number of miles of ascending grade 65 feet per mile..	1.53 "
Number of miles of ascending grade 53 feet per mile..	5.08 "
Number of miles of level.....	11.19 "

While upon the eastern side, or descent, there are 11.41 miles of grade of 105 feet per mile.

The total elevation of grade overcome at summit is 7,000 feet.

That the elevation overcome in crossing the summit of Sierra Nevada is greater than that upon any other line of road in the United States is true. But it is no less true that the grades employed in reaching that summit are less than the maximum grade employed on important roads in the United States; the Pennsylvania Central having 10 miles of grade of 95 feet per mile, while the Baltimore and Ohio railroad has one plane, 15 miles in length, on which are $11\frac{1}{2}$ continuous miles of grade of 116 feet per mile, and $3\frac{1}{2}$ of 100 feet per mile. A portion of the Virginia Central railroad was operated successfully a period of five years over two miles of grades of 300 feet

per mile, with curves of 300, and one as small as 238 feet radius, with a 30-ton locomotive engine.

By referring to the above table of grades, it will be seen that the longest piece of continuously ascending maximum grade of 105 feet per mile is about 10 miles; all of these heavy grades being relieved at frequent intervals by lesser grades or levels. So that on no portion of the road will there be so long a piece of continuously ascending grade of 105 feet per mile as upon the 116-foot grades of the Baltimore and Ohio railroad.

It is deemed unnecessary here to enter upon a calculation of the effective power of locomotive engines upon different gradients, General McClellan having given very full notes of the results of his investigations upon the subject in his memoranda on P. R. R., published in the report of the Secretary of War upon P. R. R. surveys. The following extracts from his report are given here:

"On the Pennsylvania Central road are gradients of 95 feet per mile for $9\frac{3}{4}$ miles. Passenger trains ascend this grade with a velocity of 24 miles per hour, and descend at 20 per hour.

"The working load of the heavy freight engines (weighing 65,000 lbs., on eight drivers) on the 95-foot gradient is 125 tons net, or about 208 tons, including tender and cars."

Of the Baltimore and Ohio railroad he says:

"The most interesting and analogous case, however, to which I can refer is that of the Baltimore and Ohio railroad, one of the great lines in the United States, alluded to in a previous part of this article as connecting the seaboard with the valley of the Mississippi across the Alleghany mountains. In the year 1850, 447,000 tons of merchandise and 180,000 passengers were transported on this road, the receipts amounting to \$1,343,000, the road being only about half completed. When finished to the Ohio river the receipts are expected to amount to \$3,000,000. On this road are heavy gradients, with several curves of 600 feet radius, and some of four hundred feet. It is to the mountain district of the road just opened that I wish particularly to invite attention, and for this purpose an extract is made from the official report of the chief engineer, Mr. Latrobe, one of the most distinguished engineers of North America, in which he describes the route and grades over the Alleghany mountains."

"At about a mile below this point the *high grade of 116 feet per mile begins and continues about $11\frac{1}{2}$ miles*, crossing the Potomac from Virginia into Maryland near the beginning of the grade, and thence ascending the steep side slopes of Savage river and Crab Tree creek to the summit, at the head of the latter, a total distance of about 15 miles. Upon the last three and a half miles of which the grade is reduced to about 100 feet per mile. From the summit the line passes for about 19 miles through the level and beautiful tract of country so well known as the Glades, and near their western border the route crosses the Maryland boundary, at a point about sixty miles from Cumberland, and passes into the State of Virginia, in whose territory it continues thence to the terminus on the Ohio. From the

Glades the line *descends by a grade of 116 feet per mile for eight and a half miles*, and over very rugged ground, and thence three and a half miles further to Cheat river, which it crosses at the mouth of Salt Lick creek. The route, immediately after crossing this river, ascends along the broken slopes of the Laurel Hill, by a *grade of 105 feet per mile for five miles*, to the next summit, passing the dividing ridge by a tunnel of 4,100 feet in length; and whence, after three miles of light grade, a descent by the *grade of 105 feet per mile for five miles* is made to the valley of Raccoon creek, by which and the valley of the Three Forks creek the Tygarts Valley river is reached in fourteen miles more, at the turnpike bridge above described, and $103\frac{1}{2}$ miles from Cumberland."

Virginia Central railroad.

Upon the Virginia Central railroad the Alleghany mountains were crossed with grades of 296 feet per mile, and the road operated successfully a period of over five years.

Reference is had to a pamphlet published by Chas. Ellet, esq., the engineer of the road, who says:

EASTERN SIDE.

"The length of descent from summit to foot of grade, on eastern side, is 2 37-100 miles.

"The road descends in this distance 610 feet.

"The average grade is therefore 257 feet per mile.

"The maximum grade is 296 feet per mile.

WESTERN SIDE.

"Length of descent 2 2-100 miles.

"Road descent in this distance 450 feet.

"Average grade is 223 feet per mile.

"Maximum grade is 280 feet per mile.

"On both sides of mountains the ruling curves are described with a radius of 300 feet, on which the grade is 237 feet per mile."

"The admirable engines relied on to perform the extraordinary duties imposed upon them in the passage of this summit have failed *but once* in this period ($2\frac{1}{2}$ years) to make their regular trips. The mountain has been covered with deep snow for many weeks in succession, and the cuts have been filled, for long periods, many feet in depth, with drifted snow; the ground has been covered with sleet and ice, and every impediment due to bad weather and inclement seasons has been encountered, and successfully surmounted in working the tracks.

"The total weight of engines is 55,000 lbs., or $27\frac{1}{2}$ tons, when the boiler and tank are supplied with fuel and water enough for a trip of eight miles."

"Ascending engines stop daily on a grade of 280 feet per mile, and are there held by the brakes while the tanks are being filled, and are started again, at the signal, without difficulty."

With the practical experience afforded by the workings of these roads, it may be safely assumed that a thirty-ton engine with eight drivers will ascend the maximum grades of this road with an ordinary passenger train at a speed of twenty miles per hour.

That an engine of the same class will ascend these grades, with a freight train weighing 150 tons, at a speed of 13 miles per hour.

The following is taken from memoranda of General McClellan on subject of Pacific railroad:

Calculations for a 30-ton engine on 6 drivers, total adhesive weight.....	67,200 pounds.
By formula 1, maximum load on a level is.....	1,680 tons.
By formula 2, maximum grade up which this engine can draw a load of 76 tons is.....	401 feet.
By formula 4, the maximum grade for same load is.	281 feet.
By formula 1, the maximum load for grade of 150 feet is.....	186 tons.
By formula 3, the maximum load for same grade is.	133½ tons.
By formula 1, the maximum load for grade of 200 feet is.....	146 tons.
By formula 3, the maximum load for same grade is.	104½ tons.

Comparison of elevations overcome.

Route.	Length.	Summit elevation.	Total rise and fall.	Maximum grade.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Boston route.....	500	1,440	4,700	83
New York Central.....	400	650	2,100	30
New York and Erie.....	460	1,720	6,500	70
Philadelphia route.....	340	2,400	5,600	95
Baltimore route.....	390	2,700	7,000	116
Charleston route.....	490	1,400	5,000	40
Savannah route.....	440	1,400	5,000	40
Santiago.....	110	2,640	4,340	119
Central Pacific.....	140	7,000	8,800	105

It will thus be seen that the sum of ascents and descents upon this line are but 1,800 feet more than upon the Baltimore and Ohio railroad, our line crossing a summit of 7,000 feet, the elevation of summit on that road being only 2,700 feet.

The small percentage of total rise and fall upon this line, as compared with the altitude of summit, is due to the fact that there are no undulatory grades—the rise and fall is constant, no elevation being lost.

GRADES ON LIEUTENANT BECKWITH'S ROUTE FROM LASSEN'S TO SALT LAKE—
451 MILES.

The following is a statement of grades from Lassen's to Salt Lake, taken from Lieutenant Beckwith's profile, assuming his projected improvements in location:

	Miles.	Ascending grade, feet per mile.	Descending grade, feet per mile.
Lassen's to Junction Main Forks of Humboldt.....	145	4	-----
Junction Forks to creek.....	35	31	-----
To stream near summit.....	8	89	-----
To summit of Humboldt mountains.....	1	25	-----
Summit to mountain stream.....	3	-----	25
To Camp 16.....	8	-----	58
To Camp 15.....	15	4	-----
To Camp 14.....	28	7	-----
To Camp 13.....	10	-----	21
To Camp 12.....	20	Level.	-----
To Camp 10, Fish creek.....	28	-----	31
To point on Fish creek.....	16	Level.	-----
To Camp 8, Granite mountains.....	40	-----	10
To Camp 6.....	24	0½	-----
To Camp 5.....	15	-----	12
To shore of Salt Lake.....	21	-----	10
To Camp 3.....	13	18	-----
To Oquirrh mountains, or opposite Salt Lake City....	21	8	-----
	451		

The highest grade shown being eight miles of eighty-nine feet grade, which can probably be reduced to fifty or sixty feet per mile.

ALIGNMENT.

The first twenty-five miles of line from Sacramento to Lincoln will be generally straight. From Lincoln to Barmore's, or six miles further, the least radius of curvature will be 1,432 feet.

From Barmore's (or western base) to the Truckee river, or eastern base of Sierra Nevada, the line is mostly on side hill; there is, consequently, a preponderance of curved line rendered necessary by the sinuosities of side hill and projecting points.

The least radius of curvature, however, upon the line is 573 feet, or a ten-degree curve.

The Baltimore and Ohio railroad has several curves of 600 and some of 400 feet radius.—(See report of General McClellan.)

The Virginia Central railroad had curves of 300 feet radius, on

which the grade was 237 feet per mile. One curve upon that road had a radius of 238 feet.—(See report of Charles Ellett, esq.)

Curves of 500 feet radius are common upon many of our eastern roads, and are safely traversed at a speed of thirty miles per hour.

For a particular description of the alignment of this road attention is invited to the large map of location, (scale 400 feet per inch,) exhibiting each curve and tangent, with the length and radius marked upon it.

Also, to the tabular arrangement of the same, in which each curve and tangent is laid down, from which it will be seen that between Barmore's and Truckee river, a distance of ninety-two miles, there is of straight line:

Number of curves of 573 feet radius	157
Number of curves of 716 feet radius	65
Number of curves of 955 feet radius	140
Number of curves of 1,432 feet radius	65
Number of curves of 1,910 feet radius	62
Number of curves of 2,865 feet radius	23

From the eastern base of mountains to Big Bend of Truckee the length of curved line will not exceed thirty per cent. of the whole distance, the curves being generally of over 1,500 feet radius.

Thus it will be seen that the alignment of this road compares favorably with that of many of the most important roads of the Atlantic States.

SNOWS.

The argument of obstruction from snow having been frequently urged against the central route for Pacific railroad, I have taken much pains to arrive at correct conclusions upon this subject, and feel warranted in the statement *that a railroad line upon this route can be kept open during the entire year* for the transaction of its business.

It is true that snow falls to a greater depth upon the elevated portions of this line than upon the lines of railroads in the Atlantic States.

The depth at which snow lies upon this route is plainly distinguishable at any season.

The trees are generally covered with moss down to the level of the snow, and thousands of them can be seen entirely free from moss up to a certain height, and almost entirely covered with moss from that height.

Frequent marks have also been made by persons who have traversed the route on snow-shoes during the winter by axe marks chopped in the trees at the level of the snow.

The limbs of the small trees also afford indications of the height of snow, those limbs lying beneath the snow maintaining their original or natural position, while those above the snow line are almost universally bent downwards, and not unfrequently broken by the weight of snow.

These observations lead to the conclusion that the greatest depth of undisturbed snow is 13 feet at the summit.

In places where drifts occur the depth is, of course, greater, and at corresponding points less than the average level.

This may at first seem to be a serious obstacle to the passage of railroad trains. But this depth of 13 feet is not the result of a single storm, but the *accumulation of a number of successive storms occurring during the winter*.

Snow does not melt very rapidly at this elevation during the winter.

A storm will occur and snow fall to the depth, perhaps, of three or four feet.

Another storm will, perhaps, add two or three or four feet to this depth.

Successive storms add to its depth, but it is believed that its highest level is not over 13 feet.

The town of Dutch Flat, seventy-two miles from Sacramento, and forty miles from Summit, may be considered the foot of snow line on western side, snow seldom falling more than two feet there, and melting off in a day or two.

The average depth of snow at lower end of Donner lake is about six feet.

At Neil's ranch, on the Truckee river, twenty-eight miles easterly from the summit, I am assured by Mr. Neil that the greatest depth of snow last winter was eighteen inches, and that during the five years he has lived there it has not exceeded three feet in depth.

It may be safely concluded that the line of deep snows terminates where our line strikes the Truckee river, or say twelve miles from the summit, making fifty-two miles of snow line.

It will also be remembered that our line is almost exclusively a *side-hill line*, from which the snow can be more easily removed than from a level surface.

It is only necessary, then, to start an engine with snow-ploughs from the summit each way at the commencement of a storm, clearing the snow as it falls. A similar course of procedure at each successive storm will keep the track open during the entire winter.

It is also stated that a crust soon forms upon the snow, which prevents its drifting badly.

The only point where we shall encounter a level surface of snow is in Summit valley for about two miles.

By elevating the track at this point no trouble need be anticipated.

The great dread and real danger of a storm in the mountains does not arise from the depth of snow, but from the entire absence of shelter and relief in the mountains, there being no houses of accommodation excepting upon the wagon roads across to Washoe.

The Placerville wagon road is kept open for travel during the entire winter, hotels being established every few miles along the route. With a railroad built upon this route this objection would also be entirely obviated.

TUNNELS.

Upon the line, as located, but four tunnels appear upon the profile, but upon further examination it has been deemed expedient to cut

through several sharp projecting points, instead of carrying the line around them.

It is estimated that the cost of these tunnels will not exceed the cost of the increased length of line around these points.

It will be observed that the tunnels are comparatively short, the longest being 1,370 feet in length; they can all be worked from either end, reducing the greatest consecutive length of tunnelling to 685 feet.

They are in rock, generally granite, and require no shafting.

The cost of shafting in long tunnels is usually one-third the whole cost of tunnel.

Their lengths are as follows :

1	500 feet long.	1	1,300 feet long.	1	1,200 feet long.
1	600 "	1	1,370 "	1	1,100 "
1	800 "	1	1,250 "	1	400 "
1	1,200 "	1	1,300 "	1	1,070 "
1	1,000 "	1	1,370 "	1	1,100 "
1	1,100 "	1	300 "	1	450 "
				—	—
				18	17,410
				=====	=====

Making 18 tunnels, with an aggregate length of 17,410 feet, costing, at \$50 per linear foot, \$870,500.

The longest tunnel can be excavated in 13 months, at the rate of 2 feet per day.

The following statistics were given in report of General McClellan to the Secretary of War, on Pacific railroad :

Nerthe tunnel, France—15,153 feet long; 24 shafts; aggregate length of which was 7,589 feet; deepest of which was 610 feet; in very hard limestone; dimensions, $29\frac{1}{2}$ by $26\frac{1}{4}$ feet.

Its cost was as follows :

For mining body of tunnel.....	\$705,982 00
For mining shafts.....	109,081 00
Masonry for shafts.....	49,069 00
Lining for body of tunnel.....	423,711 00
Cost of aqueduct.....	10,607 00
Total cost of tunnel.....	1,298,450 00

Cost of mining main body of tunnel, \$46 58 per linear foot.

Woodhead tunnel, England— $3\frac{1}{2}$ miles long; 5 shafts; 400 to 600 feet deep; rock, granite, or mill-stone rock; entire cost, \$1,026,705; cost of tunnel, including shafting, \$55 per linear foot. Excavated at the rate of 8 feet per day.

Uppingham tunnel—1,320 feet long; cost, \$40 per linear foot.

Black Rock tunnel, Pennsylvania—1,932 feet long; rock, greywacke; 6 shafts; cost, \$77 per linear foot.

The cost per cubic yard of excavating tunnels in the United States has been:

Lehigh, very hard granite.....	\$4 36	per linear foot.
Schuylkill State.....	2 00	" "
Union State.....	2 09	" "
Blue Ridge tunnel.....	4 00	" "

A section of tunnel, averaging 20 by 17 feet, contains $12\frac{2}{3}$ cubic yards per linear foot.

Time consumed in making the trip with passenger trains from Sacramento to Virginia Station.

	Distance.	Speed per hour.	Time.
	<i>Miles.</i>	<i>Miles</i>	<i>Hours.</i>
Sacramento to Barmore's	31	31	1. 00
Stoppage at Barmore's			. 30
Barmore's to Summit.....	81	20	4. 00
Four stoppages, fifteen minutes each			1. 00
Summit to Truckee river.....	11	15	. 45
Stoppage			. 15
Truckee to Neil's.....	17	34	. 30
Neil's to Stone's, or Virginia Station.....	15	34	. 30
Total.....	155		8. 30

A train leaving Sacramento at 6 a. m. would arrive at Virginia Station (13 miles north of Virginia) at 2.30 p. m., passengers reaching Virginia City at 4.30 p. m.; Gold Hill, 4.50 p. m.; Silver City, 5.15; Chinatown, 6.10; and Carson City, 7.15 p. m.

Freight trains leaving Sacramento at 6 a. m. would reach Virginia Station at 7 p. m., including all stoppages.

Returning, the passengers leaving Virginia depot at 5 p. m. would arrive in Sacramento in time to take the 2 o'clock boat, and arrive in San Francisco the same evening.

ESTIMATE OF COST.

The estimated cost of this road will be found to exceed the average cost of railroads in the Atlantic States, but is nevertheless a cheaper line than has been heretofore estimated for the crossing of the Sierra Nevada mountains.

The rugged nature of the country over which the line passes, the character of the excavations, (which for ninety miles are almost exclusively rock cuttings,) the high cost of labor in California, the extra weight of rail, (estimated at seventy-five pounds per yard,) with its cost of transportation to California, all tend to swell the cost of road beyond the average cost of railroads in the Atlantic States.

But when it is considered that this line accomplishes the crossing of Sierra Nevadas, (by far the most difficult and expensive portion

of the great line across our continent,) is carried over an elevation of 7,000 feet in height, entirely avoids the second summit of Sierra Nevada, saves 184 miles in distance, and \$13,500,000 in cost to the Pacific railroad, its cost of \$88,000 per mile can scarcely be deemed high.

The Boston and Providence railroad cost..... \$81,273 00 per mile.

The Boston and Lowell railroad cost..... 78,636 00 "

The New York and Erie railroad, about..... 80,000 00 "

The Hudson River railroad, about..... 80,000 00 "

Cost of road from Sacramento to State line, or Neil's, 140 miles.

	Miles.	Cost per mile.	Total.
Sacramento to Lincoln	25	\$50,000	\$1,250,000
Lincoln to Barmore's.....	6	60,000	360,000
Barmore's to Nevada road	12	90,000	1,080,000
Nevada Road to Clipper Gap.....	6	50,000	300,000
Clipper Gap to Long Ravine	12	80,000	960,000
Long Ravine to Gravel Ridge	9	110,000	990,000
Gravel Ridge to Bear River.....	5	85,000	425,000
Bear River to South Yuba	21	100,000	2,100,000
Yuba to Hall's Cañon.....	1	75,000	75,000
Hall's Cañon to Summit valley	11	100,000	1,100,000
In Summit valley	2	75,000	150,000
To Summit Sierras	2	150,000	300,000
Summit to Strong's Cañon.....	2	150,000	300,000
Strong's Cañon to Truckee.....	10	100,000	1,000,000
Truckee to Neil's, or State line.....	16	70,000	1,120,000
Add 18 tunnels			870,000
Total cost to State line	140		12,380,000

Or an average cost of \$88,428 per mile.

Additional cost to Stone's crossing of Truckee, or Virginia Station, 15 miles.

	Miles.	Cost per mile.	Total.
Neil's to Stout's.....	7	\$70,000	\$490,000
Stout's to Stone's.....	8	50,000	400,000
Total cost	15		890,000
Making total cost of 155 miles			13,270,000

Additional cost to Big Bend of Truckee, or Humboldt Desert, 23 miles.

	Miles.	Cost per mile.	Total.
Stone's Crossing or Big Bend.....	23	\$70,000	\$1,610,000
Making total cost of 178 miles			14,880,000
Or an average cost of \$83,600 per mile.			

Additional cost of a railroad line from Big Bend of Truckee to Lassen's Meadows, or to a connexion with Lieutenant Beckwith's line on Humboldt river, 104 miles.

	Miles.	Cost per mile.	Total.
From Big Bend of Truckee to Lassen's Meadows...	104	\$60,000	\$6,240,000
Making total cost to Lassen's Meadows 282 miles.	-----	-----	21,120,000
Or an average cost of \$74,900 per mile.			

Additional cost of line from Lassen's Meadows to Salt Lake, taken from estimates of Lieutenant Beckwith, Pacific Railroad Reports, 451 miles.

	Miles.	Cost per mile.	Total.
Lassen's Meadows to Salt Lake	451	\$45,000	\$20,295,000
Making total cost of line from Sacramento to Salt Lake, 733 miles	-----	-----	41,415,000
Or an average cost of \$56,500 per mile.			

Estimated cost of line from Salt Lake to Council Bluffs, by Lieutenant Beckwith, Pacific Railroad Reports, 1,125 miles.

	Miles.	Cost per mile.	Total.
Council Bluffs to Salt Lake	1,125	-----	\$58,485,000
Making total cost from Council Bluffs to Sacramento	1,858	-----	99,870,000
For purpose of comparison, add cost Sac. to Benicia.	58	-----	2,630,000

	Miles.		Total.
Gives total length, Council Bluffs to Benicia	1,916	Total cost	\$102,500,000
Estimate by Beckwith's route...	2,100	Total cost	116,000,000
Saving, in distance	184	In cost	13,500,000

Recapitulation and estimate of entire cost of Pacific railroad line, taking Lieutenant Beckwith's estimates, from Council Bluffs to Lassen's Meadows, and thence via this route to Sacramento—total distance 1,858 miles.

	Miles.	Cost per mile.	Total.
Council Bluffs to Black Hills.....	520	\$35,000	\$18,200,000
Black Hills to South Pass.....	291	75,000	21,825,000
South Pass to Fort Bridger.....	131	50,000	6,550,000
Fort Bridger to Salt Lake.....	173	60,000	10,380,000
Timpanogos Cañon	10	150,000	1,500,000
Salt Lake to Lassen's Meadows.....	451	45,000	20,295,000
Lassen's to Big Bend, Truckee.....	104	60,000	6,240,000
Big Bend to California State line	38	66,000	2,500,000
State line to Sacramento.....	140	88,428	12,380,000
Total length.....	1,858	-----	99,870,000

The importance of this route to the great enterprise of which it is destined to form a link cannot be more clearly manifested than in the reduction of cost in constructing the Pacific railroad.

In all the previous comparisons of cost and distance, the central route has labored under great disadvantage, and has not taken the rank among routes to which, by its merits, it was entitled.

A reduction in cost of \$13,500,000, and a saving in distance of 184 miles of line, present features which may well invite consideration from the friends of that project.

General Remarks.

It will be observed that the estimates of cost and distances from Big Bend of Truckee to Salt Lake are made upon the Beckwith or Humboldt route, a distance of 733 miles.

While it is possible that a more southerly line can be found along or near the Simpson route, in the absence of surveys or data for estimate, no reliable opinion can be found of its feasibility or probable cost.

Our line at Big Bend of Truckee is in position to join an extension on either route.

According to the itinerary of Captain Simpson, it does not appear that the more southerly route presents any advantage in distance to Salt Lake City.

The distance given by Captain Simpson from Carson City to Camp Floyd is 554 miles. Adding to this the distance from Sacramento to Carson City, 142 miles, and the distance from Camp Floyd to Salt Lake City, say 35 miles, it gives the total distance from Sacramento to Salt Lake City as 731 miles.

From our line at Big Bend of Truckee, *via* Simpson route, to Salt

Lake, the distance would be about the same as to Salt Lake City on the Humboldt route; but should the main line of lower road be carried around the head of Utah lake and up the Timpanogos, it would make the lower line about 50 miles the shortest.

If a line can be found from the sink of Humboldt across to Gravelly Ford, (on that river,) it will shorten the Humboldt route about fifty miles.

There are three important considerations, however, which give the route up the Humboldt river a manifest advantage over any other route for a railroad line.

First. Its availability for a connexion with Oregon and Washington.

Lassen's Meadows are only about eighty miles south of the forty-second parallel of latitude, which parallel is the southern boundary of Oregon, there being a good emigrant road from that point to Jacksonville and Fort Lane, in Oregon, the line following around the northerly end of Mud lake, up Black Rock creek, southerly end of Goose lake, and between the Klamath lakes to Jacksonville, from which point a good railroad line with light grades was found (see Report of Lieutenants Williamson and Abbott) to Portland, on the Columbia river; the distance from Lassen's Meadows to Jacksonville being about 280 miles.

Second. The recent discoveries of silver on the Humboldt river in the vicinity of Lassen's Meadows.

The well-known discoveries of silver ore in the Washoe mountains has drawn thither in the last two years a population of about 17,000 souls, most of whom are hardy, able-bodied miners. Numerous flourishing towns and villages have sprung into existence, permanent improvements have been made, and but a few years will elapse before a new State will be formed out of that portion of Nevada Territory.

Within the last few months discoveries of silver have been made on the Humboldt, which are said to rival those of Washoe. Already a new city is in existence, and hundreds of miners have gone there. There will, of course, be but a small emigration there this winter, but next spring and summer will undoubtedly witness an influx of population hardly second to that of Washoe.

The mines are stated to be of great extent and richness, many of the out-croppings assaying over \$1,000 per ton. A number of tons of ore have been sent to Sacramento and San Francisco for trial, the results of which have proved them to be of extraordinary richness.

Cinnabar and coal have also been discovered in this locality.

Several mills are in the course of erection, and permanent improvements are being rapidly made.

Being on the main emigrant route to California, and accessible from both Oregon and California, the accessions to its population cannot fail to be large; and it will not be many years before the new State of *Humboldt* will apply for admission into the Union.

Thirdly. From the feasibility of this as a railroad route, and the character of soil, &c., along its route.

After striking the Humboldt at Lassen's there are 190 miles of unobstructed valley, on which the grade for 145 miles is only four feet

per mile; 36 miles are level; 24 miles has a grade of $\frac{1}{2}$ a foot per mile; 160 miles has a grade 4 feet; 50 miles has a grade of 7 and 8 feet; 53 miles of grade of 8 and 10 feet; 43 miles a grade of 18 to 21 feet; 40 miles of from 25 to 31 feet; 18 miles of grade of 58 feet, there being only 8 miles of a higher grade in 89 feet, which can undoubtedly be reduced.

The elevation at Lassen's is only about 250 feet lower than the Big Bend of Truckee, the distance 104 miles.

There will be then 539 miles of light grades, not exceeding 31 feet per mile on a line 555 miles long, a feature of no little importance in determining the location of the Pacific railroad.

The valley of the Humboldt has been traversed by many thousands of emigrants to Oregon and California, and is well known to embrace many valleys of alluvial fertile soil.

The general character of the soil in the great basin is barren and sterile, except where intersected by rivers. The valley of the Humboldt has received the largest share of the emigrant travel, for the reason that it afforded good grass and water in abundance.

Being more inviting to emigrants, it will settle up more rapidly, and thereby greatly facilitate the construction of a railroad line on this route.

Accompanying this report will be found the following maps, profiles, &c.:

A. Large map, on a scale of 400 feet per inch, (90 feet long,) showing the curves and tangents from Dutch Flat to Truckee river, for filing in Secretary of State's office.

B. 17 sheets of location, numbered 1 to 17, inclusive, scale 400 feet per inch, showing curves and tangents from Barmore's (or western base) to Dutch Flat, for filing, as above. (Also copies of same.)

C. 5 large maps, (20 feet long,) scale 400 feet per inch, showing curves and tangents, as follows:

No. 1. Barmore's to Clipper Gap.

No. 2. Clipper Gap to Dutch Flat.

No. 3. Dutch Flat to Rattlesnake Bluffs.

No. 4. Rattlesnake Bluffs to Summit.

No. 5. Summit to eastern terminus of survey.

D. 32 sheets, numbered 1 to 32, scale 400 feet per inch, exhibiting the angular line as run with projected curves and tangents thereon.

E. Map, (16 feet long,) scale 5,000 feet per inch, exhibiting the country from San Francisco to terminus of survey, showing our line, with adjoining towns and rivers, for 10 miles on either side, and connecting railroads.

F. Traced copy of the same.

G. Smaller map, prepared for lithographing, showing whole country from San Francisco to Big Bend of Truckee.

H. Britton and Rey's map of California.

I. United States surveyor general's map of State.

J. Elliott's map of a portion of the State.

K. Ransom's map of San Francisco and 40 miles around.

L. Map of Sacramento Valley railroad, Sacramento to Folsom, scale 5,000.

M. Map of California Central railroad location, Folsom to Marysville.

N. Map of California Northern railroad, Marysville to Oroville.

O. Map of survey, Sacramento to Benicia.

P. Map of survey, Marysville to Benicia.

Q. Map of survey, Folsom to Placerville.

R. Smith's map of survey for canal up North fork of American river to Lake Bigler.

S. Connected map of Lieutenant Beckwith's surveys, showing the topography, &c., from Benicia to Salt Lake.

T. Map of Captain Simpson's route to Camp Floyd.

U. Large map, compiled in office of Secretary of War, showing country west of the Mississippi river, with all the surveys for Pacific railroad laid down thereon.

V. Smaller map of routes, as above.

W. Map of Rancho del Paso, through which our line passes.

X. Map of city of Sacramento.

Y. Map of survey across Sacramento valley.

Z. Degroot's map of Washoe mines, also Pierce's map of Washoe.

PROFILES.

a. Sheets, 1 to 34, inclusive, working profile of line as run, (horizontal scale 400 feet ; vertical scale 30 feet per inch.)

b. Profile of line to Dutch Flat, (horizontal scale 500 feet per inch ; vertical scale 50 feet per inch.)

c. Two profiles of line reaching from Lincoln to Truckee river, (horizontal scale 1,000 feet ; vertical scale 100 feet per inch.)

d. 1 profile, extending from Sacramento to Big Bend of Truckee ; also showing a section of Washoe mountains, on a line from Stout's to Fort Churchill, (horizontal scale 11,000 feet ; vertical scale 600 feet per inch.)

e. Copy of same, for filing in Secretary of State's office.

f. Profile of Lieutenant Beckwith's line, Salt Lake to Fort Reading, containing profile of Noble's Pass.

g. 2 sheets of profiles of various southern passes across Sierra Nevada, (published in Secretary of War's office.)

h. Barometric profile of reconnoissances in Sierra Nevada mountains, viz : Georgetown route ; Dutch Flat route ; Henness Pass route *via* Nevada.

Also a set of Pacific Railroad Reports, and all the maps, profiles, &c., relating thereto, published by United States government.

Our levels indicate that many of the passes in the Sierra Nevada mountains will be found, upon actual survey, much higher than they have been represented.

The estimates of business and revenue of road will be deferred to another time, in consequence of delay in procuring the statistics of the Washoe trade and business.

In conclusion, I take this opportunity of expressing my obligations

to Messrs. Edward Judah, assistant in charge of party ; John R. Brown, in charge of levels ; H. T. Hall, topographer, for the able and satisfactory manner in which they performed the arduous duties assigned them ; also to Wm. S. Watson, esq., chief engineer of California Northern railroad, for valuable assistance in office ; to Dr. D. W. Strong, of Dutch Flat, who accompanied me in my reconnoissance last fall, who was with me during the entire survey, and whose experience in and knowledge of the mountains was of the greatest assistance, and contributed to the success of the survey ; also to S. B. Wyman, esq., of Virginia ; Mr. Neil, of Neilsburgh ; Mr. Applegate, of Empire Mills ; Messrs. Egbert and Brickell, of Illinoistown, who were with me on portions of the route ; to Charles Marsh, esq., of Nevada, who accompanied me on the reconnoissance *via* Nevada and Henness Pass ; also to Messrs. John Shaw, of Mormon Island, and D. W. McKinney, of Georgetown, who accompanied me on Georgetown reconnoissance ; also to Mr. Stout, of Stout's Crossing, Nevada Territory, F. Moore, esq., of Dutch Flat, and R. P. Robinson, esq., of Sacramento, for courtesies extended.

Very respectfully,

THEODORE D. JUDAH,
Chief Engineer Central Pacific Railroad of California.

OFFICERS OF CENTRAL PACIFIC RAILROAD COMPANY, OF CALIFORNIA.

PRESIDENT,

LELAND STANFORD, *Sacramento.*

VICE-PRESIDENT,

C. P. HUNTINGTON, *Sacramento.*

TREASURER,

MARK HOPKINS, *Sacramento.*

CHIEF ENGINEER,

THEO. D. JUDAH, *Sacramento.*

DIRECTORS :

LELAND STANFORD, <i>Sacramento.</i>	JAMES BAILEY, <i>Sacramento.</i>
C. P. HUNTINGTON, <i>Sacramento.</i>	MARK HOPKINS, <i>Sacramento.</i>
LUCIUS A. BOOTH, <i>Sacramento.</i>	THEO. D. JUDAH, <i>Sacramento.</i>
CHARLES CROCKER, <i>Sacramento.</i>	D. W. STRONG, <i>Dutch Flat.</i>
CHARLES MARSH, <i>Nevada.</i>	

INCOME TAX.

RESOLUTION

OF THE

LEGISLATURE OF CONNECTICUT,

ON THE

Subject of the income tax.

DECEMBER 9, 1861.—Referred to the Committee of Ways and Means, and ordered to be printed.

STATE OF CONNECTICUT.

GENERAL ASSEMBLY,
Special Session, October, 1861.

Resolved by this assembly, That the senators and representatives from this State in the Congress of the United States be, and they are hereby, requested to use their efforts and influence to procure the repeal of so much of the act of Congress passed at the recent special session, entitled "An act to provide increased revenue from imports, to pay interest on the public debt, and for other purposes," as imposes a tax upon the "income" of the several residents of the United States; and in case such repeal cannot be effected, to use their influence to procure such modification of said act as that the amount expected to be raised from incomes may be apportioned among the several States; and that said States, respectively, shall have the privilege of assuming and paying their several quotas or proportions thereof, and of providing for assessing and collecting the same in their own way and manner.

Resolved, That his excellency the governor be, and he is hereby, requested to cause to be transmitted a copy of the foregoing resolution, duly certified by the secretary of state, to each of the senators and representatives from this State in the Congress of the United States.

Approved October 16, 1861.

STATE OF CONNECTICUT, ss:

OFFICE OF SECRETARY OF STATE.

I hereby certify that the above is a true copy of record in this office.

[L. s.] In testimony whereof, I have hereunto set my hand and affixed the seal of said State, at Hartford, this second day of December, A. D. 1861.

J. H. TRUMBULL,
Secretary of State.

WEIGHTS, MEASURES, AND CURRENCY.

RESOLUTIONS

OF THE

LEGISLATURE OF CONNECTICUT,

ON

The subject of weights, measures, and currencies.

DECEMBER 9, 1861.—Referred to the Committee of Ways and Means, and ordered to be printed

STATE OF CONNECTICUT.

GENERAL ASSEMBLY,
May Session, A. D. 1861.

Whereas, resolutions have been passed by the legislature of the State of Maine, recommending the Congress of the United States to take measures to establish a uniform decimal system of weights, measures, and currencies, as particularly set forth in said resolutions:

Resolved, That this legislature concur in the recommendation contained in said resolutions of the State of Maine, and that our senators and representatives in Congress be requested to co-operate with the senators and representatives of the State of Maine in relation to said subject-matter.

Resolved, That the secretary of state be instructed to forward a copy of these resolutions to our senators and representatives in Congress.

Approved July 3, 1861.

OFFICE OF SECRETARY OF STATE.

I hereby certify that the foregoing is a true copy of the original resolutions on file in this office.

In testimony whereof, I have hereunto set my hand and affixed the [L. S.] seal of said State, at Hartford, this 26th day of August, A. D. 1861.

J. H. TRUMBULL,
Secretary of State.

STATE OF MASSACHUSETTS,
SOUTHERN DISTRICT.
In the Superior Court of the County of Suffolk.
J. C. THOMPSON, Plaintiff,
vs.
J. H. TRUMBULL, Defendant.

The subject of the within-entitled cause is a bill of exchange, to wit: a bill of exchange, drawn by J. C. Thompson, Plaintiff, on J. H. Trumbull, Defendant, for the sum of one hundred and fifty dollars, and is payable to the order of J. C. Thompson, Plaintiff.

And it is further shown that the said bill of exchange was duly cashed by the Defendant, J. H. Trumbull, on the 10th day of August, 1861.

And it is further shown that the said bill of exchange was duly cashed by the Defendant, J. H. Trumbull, on the 10th day of August, 1861.

Wherefore, the Plaintiff prays that the Defendant be compelled to pay to the Plaintiff the sum of one hundred and fifty dollars, and interest thereon from the date of the maturity of the bill of exchange, and costs of suit, and that the Defendant be compelled to pay to the Plaintiff the sum of one hundred and fifty dollars, and interest thereon from the date of the maturity of the bill of exchange, and costs of suit, and that the Defendant be compelled to pay to the Plaintiff the sum of one hundred and fifty dollars, and interest thereon from the date of the maturity of the bill of exchange, and costs of suit.

And it is further shown that the said bill of exchange was duly cashed by the Defendant, J. H. Trumbull, on the 10th day of August, 1861.

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And it is further shown that the said bill of exchange was duly cashed by the Defendant, J. H. Trumbull, on the 10th day of August, 1861.

CHARLES H. FOSTER.

RETURNS
OF
VOTES IN THE 8TH AND 9TH PRECINCTS
IN

*Hyde county, N. C., in the 2d congressional district of North Carolina,
in the matter of the claim of Charles H. Foster to a seat in this House
as representative from the 2d congressional district of the State of
North Carolina.*

DECEMBER 9, 1861.--Referred to the Committee of Elections, and ordered to be printed.

EIGHTH PRECINCT VOTE.

To the Provost Marshal:

At an election held on Thursday, the 28th day of November, one thousand eight hundred and sixty-one, at the school-house on Kinnekut, in the county of Hyde, being the eighth election precinct of said county, on closing the poll and counting the votes it appeared that, for representative in Congress, Charles Henry Foster received the following votes :

1 Selby Mukins	19 Watson Gray
2 William O'Neal	20 Holawey Price
3 L. J. Gray	21 Banister Scarbro
4 Allen J. Gray	22 Isaac L. Hooper
5 Jacob Farrow	23 Lancaster Farrow
6 John Farrow	24 Ervin Williams
7 Christ. Barnes	25 Thomas Scarbro
8 Ivy Peel	26 John A. Scarbro
9 Richard Scarbro	27 Noah Price
10 T. F. Miller	28 Elias Outlaw
11 John A. Morgan	29 Davis Gray
12 Fields Mukins	30 Francis Farrow
13 Warren O'Neal	31 George O'Neal
14 Zion F. Scarbro	32 Edmond Gray
15 Steven Gray	33 Joshua Gray
16 Hezekiah Miller	34 M. B. Gray
17 Lorenzo Hooper	35 Elias Outlaw
18 Daniel Best	36 Thomas Scarbro, sr.

37 Wallace Gray	64 Davis Gray
38 Anderson Gray	65 William Cazy
39 John H. Medgett	66 G. M. Williams
40 Thomas Gray, jr.	67 John Mukins
41 Oliver Gray	68 Abram Barnes
42 Nasa Mukins	69 Josiah G. Farrow
43 William R. Mukins	70 Thomas Oneal
44 John Barnes	71 Ezekiel Scarbro
45 Abner Gray	72 H. S. Scarbro
46 Damoren Gray	73 Isaac Williams
47 Selby Mukins	74 Batemon Miller
48 Tilmon Price	75 Jos. S. Williams
49 Nasa Scarbro	76 Chris. Fulcher
50 Allen W. Gray	77 Howard N. Barnett
51 Noah Price	78 Levin B. Gray
52 Lott Farrow	79 C. P. Farrow
53 Joseph Scarbro	80 James Quidley
54 Ezekiel Best	81 Arnold Hooper
55 Damoren Mukins	82 P. M. Farrow
56 Jesse Gray	83 S. F. Farrow
57 Nathan Gray	84 Batemon Price
58 Richard Farrow	85 Cyrus K. Hooper
59 Jesse Oneal	86 Thomas Price
60 Jos. M. Williams	87 M. N. Taylor
61 Christopher Miller	88 Sanderson Gray
62 Even Williams	89 Arnold Scarbro
63 Asa Gray	90 Banister Barnes

The foregoing is a true list of the voters at an election for a representative in Congress for the second district, held on Kennekut, in the county of Hyde, on Thursday, the 28th day of November, 1861. In testimony whereof we hereunto set our hands the said 28th November, 1861.

H. S. SCARBROUGH.

B. P. MILLER.

CHRISTOPHER P. FARROW, *J. P.*

NINTH PRECINCT VOTE.

To the Provost Marshal at Fort Hatteras :

At an election held on Thursday, the 28th day of November, one thousand eight hundred and sixty-one, at the school-house at Chickamacomico, in the county of Hyde, being the ninth election precinct of the said county, on closing poll and counting the votes it appeared that, for representative in Congress, Charles Henry Foster had fifty-one votes.

In testimony whereof, we have hereunto set our hands the said 28th day of November, 1861.

CORNELIUS PAINE,
WILLIAM D. PUGH,
WILLIAM H. MUKINS,
Inspectors of Election.

Poll holden.

S. M. PUGH, *J. P.*

POLL LIST.

This is to certify that the following is a correct list of the voters at an election for a representative in Congress, held at Chickama-comico, on Thursday, the 28th day of November, 1861.

NAMES OF VOTERS.

- | | |
|--------------------------|--------------------------|
| 1 Jethrow A. Midyette | 27 Ezekiel Midyette, sr. |
| 2 Charles F. Thomas | 28 Edward Paine |
| 3 Lafayette Douglass | 29 Ira Midyette, sr. |
| 4 Damnon G. Midyette | 30 William Paine |
| 5 Banister Gray | 31 Richard Midyette |
| 6 James Mukins | 32 Rinaldo M. O'Neal |
| 7 Ezekiel Hooper | 33 Ira Midyette, jr. |
| 8 William Gray | 34 Tilmon F. Pugh |
| 9 Davis Gray | 35 Jeremiah H. Mukins |
| 10 Watson L. Midyette | 36 Edmond D. Hooper |
| 11 Benj. S. Pugh | 37 Elunegan Midyette |
| 12 John P. Pugh | 38 William C. Hooper |
| 13 Cyrus Hooper | 39 Wallace D. Gray |
| 14 Edmond D. Stow | 40 George W. Midyette |
| 15 William Weatherington | 41 David P. Gray |
| 16 Richard G. Hooper | 42 Edward R. Hooper |
| 17 Anthony D. Gray | 43 Daniel S. Mukins |
| 18 Joseph S. Gray | 44 William H. Mukins |
| 19 Luke M. Gray | 45 William D. Pugh |
| 20 Jethrow H. Midyette | 46 Sparrow M. Pugh |
| 21 John Beste | 47 Cornelius Paine |
| 22 David D. Midyette | 48 Nicodemus Midyette |
| 23 Ezekiel Midyette, jr. | 49 Abraham F. Hooper |
| 24 John A. Midyette | 50 Daniel S. Midyette |
| 25 Richard W. Midyette | 51 Little B. Midyette. |
| 26 Joseph P. Midyette | |

In testimony whereof, we have hereunto set our hands the said 28th day of November, 1861.

CORNELIUS PAINE,
WILLIAM D. PUGH,
WILLIAM H. MUKINS,
Inspectors of Election.

In testimony whereof we have hereunto set our hands the said
 25th day of November 1861.

CORNELIUS FAIRBANKS
 WILLIAM D. FORD
 WILLIAM H. MERRILL

S. M. FORD & S.

PAGE TWO

This is to certify that the following is a correct list of the names
 as an election for a representative in Congress held at Charleston
 on the 25th day of November 1861.

NAMES OF VOTERS

- | | | | |
|----|---------------------|----|---------------------|
| 1 | John A. Milledge | 27 | Frank Milledge |
| 2 | Charles F. Thomas | 28 | Edward F. Thomas |
| 3 | Lady Anne Buchanan | 29 | John Buchanan |
| 4 | Benson G. Milledge | 30 | William F. Milledge |
| 5 | Richard Gray | 31 | Richard Milledge |
| 6 | James Milledge | 32 | Thomas M. O'Neal |
| 7 | Frank Milledge | 33 | John Milledge |
| 8 | William Gray | 34 | Thomas F. Gray |
| 9 | David Gray | 35 | Thomas H. Milledge |
| 10 | Walter L. Milledge | 36 | Thomas D. Milledge |
| 11 | John F. Ford | 37 | Thomas Milledge |
| 12 | John F. Ford | 38 | Thomas F. Ford |
| 13 | George Hager | 39 | Thomas F. Gray |
| 14 | Richard D. Gray | 40 | Thomas H. Milledge |
| 15 | William H. Milledge | 41 | Thomas F. Gray |
| 16 | Richard G. Hager | 42 | Thomas M. Hager |
| 17 | Anthony H. Gray | 43 | David S. Milledge |
| 18 | Joseph S. Gray | 44 | William H. Milledge |
| 19 | John M. Gray | 45 | William D. Ford |
| 20 | John H. Milledge | 46 | Thomas M. Ford |
| 21 | John Hager | 47 | Thomas F. Milledge |
| 22 | David D. Milledge | 48 | Thomas Milledge |
| 23 | Frank Milledge | 49 | Thomas F. Hager |
| 24 | John A. Milledge | 50 | Thomas S. Milledge |
| 25 | Richard W. Milledge | 51 | John H. Milledge |
| 26 | Joseph P. Milledge | | |

In testimony whereof we have hereunto set our hands the said
 25th day of November 1861.

CORNELIUS FAIRBANKS
 WILLIAM D. FORD
 WILLIAM H. MERRILL

LE GRAND BYINGTON vs. WILLIAM VANDEVER.

ADDITIONAL PAPERS

IN THE CASE OF THE

CONTESTED SEAT OF WM. VANDEVER,

A

Representative from the State of Iowa in the thirty-seventh Congress.

DECEMBER 9, 1861.—Referred to the Committee of Elections.

DECEMBER 10, 1861.—Ordered to be printed.

STATE OF IOWA.

ADJUTANT GENERAL'S OFFICE,

Davenport, November 27, 1861.

DEAR SIR: In reply to your letter of yesterday, I have to state that Col. William Vandever has date and rank; as colonel of the ninth regiment Iowa volunteer infantry, from August 30, 1861.

Truly yours,

N. B. BAKER,

Adjutant General of Iowa.

HON. JAMES GRANT, *Davenport, Iowa.*

STATE OF IOWA.

OFFICE OF SECRETARY OF STATE,

Des Moines, November 30, 1861.

DEAR SIR: In compliance with the request of your letter of the 14th, I herewith send you a list showing the number of votes cast for representative to Congress in the second congressional district, as returned to my office.

Yours, truly,

ELIJAH SELLS, *Secretary of State,*

By JNO. M. DAVIS, *Deputy.*

LE GRAND BYINGTON, Esq.

A list exhibiting the votes cast for representative to Congress in the second congressional district, State of Iowa, as returned to the office of secretary of state.

Counties.	VOTES.			
	Le Grand Byington.	Wm. Hockingberry.	— Wilson.	Scattering.
Johnson.....	568	178	.....	5
Carroll.....	46	.....	1	.....
Sac.....	10	.....	.....	.....
Iowa.....	19	.....	.....	.....
Greene.....	14	.....	.....	.....
Dubuque.....	2,469	.....	.....	.....
Delaware.....	528	.....	.....	.....
Calhoun.....	18	.....	.....	.....
Buchanan.....	221	.....	.....	.....
	3,893	178	1	5

STATE OF IOWA, ss:

I, Elijah Sells, secretary of state of the State of Iowa, hereby certify that the foregoing list correctly represents the ballots cast for representative to Congress in the second congressional district of the State of Iowa, at the "general election" held October 8, 1861, as exhibited by the returns received at my office, which ballots were not canvassed by the board of State canvassers, they being of the opinion that there was no vacancy in the said office.

[L. s.] In testimony whereof, I have hereunto set my hand and affixed the great seal of the State of Iowa.

Done at Des Moines this 30th day of November, 1861.

ELIJAH SELLS.

STATE OF IOWA.

ADJUTANT GENERAL'S OFFICE,
Davenport, December 3, 1861.

In reply to yours of this date, making inquiries concerning Hon. William Vandever, M. C., I will say that he has not resigned his commission as colonel of the 9th regiment Iowa volunteers, that I am aware of.

Field officers do not leave their regiments "on furlough," but I am not advised whether Colonel Vandever is now with his regiment or away from it on leave of absence.

Truly yours,

N. B. BAKER,
Adjutant General.

LE GRAND BYINGTON, Esq., *Iowa City.*

HEADQUARTERS ST. LOUIS DISTRICT,
St. Louis, Missouri, December 3, 1861.

DEAR SIR: In reply to your note of the 30th ultimo, I can inform you that the ninth Iowa is stationed at Paupin city, Missouri. Col. Vandever is absent on leave for thirty days, to be continued at the discretion of the Secretary of War.

Very respectfully, your obedient servant,

SAMUEL R. CURTIS,
Brigadier General U. S. A.

LE GRAND BYINGTON, Esq.

Field officers do not leave their regiments "on furlough," but I
 am not advised whether Colonel Vandover is now with his regiment
 or away from it on leave of absence.

Truly yours,

N. B. BAKER,
 Adjutant General.

In Grand Brigade, Fed., Iowa City.

Headquarters 3d Iowa District,
 St. Louis, Missouri, December 2, 1861.

Dear Sir: In reply to your note of the 30th ultimo, I can inform
 you that the ninth Iowa is stationed at Hannibal city, Missouri. Col.
 Vandover is absent on leave for thirty days, to be continued at the
 discretion of the Secretary of War.

Very respectfully, your obedient servant,
 SAMUEL H. CURTIS,
 Brigadier General U. S. A.

In Grand Brigade, Fed.

Two copies of this report are to be sent to the Adjutant General's Office,
 and one copy to the Adjutant General of the Department. The report
 will be sent to the Adjutant General of the Department on the 10th
 inst. It is requested that you will send the report to the Adjutant
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ALLIES HALL

ADJUTANT GENERAL'S OFFICE

Adjutant General's Office

December 2, 1861

It is requested that you will send the report to the Adjutant
 General of the Department on the 10th inst. It is requested that you
 will send the report to the Adjutant General of the Department on the
 10th inst. It is requested that you will send the report to the
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 report to the Adjutant General of the Department on the 10th inst.

BOARD OF TRADE, PHILADELPHIA.

COMMUNICATION

FROM THE

BOARD OF TRADE OF PHILADELPHIA,

IN RELATION TO

Maritime defences.

DECEMBER 11, 1861.—Referred to the Committee on Military Affairs, and ordered to be printed.

OFFICE OF THE BOARD OF TRADE,
Philadelphia, December 2, 1861.

SIR: In accordance with the order of this board, I beg herewith to transmit copies of the resolutions adopted at their meeting of November 25 ultimo, on the subject of the maritime defences of this city and port.

Very respectfully, your obedient servant,
LORIN BLODGET, *Secretary.*

HON. W. MORRIS DAVIS.

On motion of George L. Buzby, esq., seconded by George N. Tatham, esq., it was

Resolved, That the river and bay defences of Philadelphia are entirely inadequate, and need to be immediately and largely increased, and that it is the duty of the United States government to superintend and effect such increase, at such points as a competent corps of engineers may indicate, with the least possible delay.

Resolved, That the ardent patriotism and efficient services of Pennsylvania in the work of suppressing the southern rebellion give her the right to demand from the national government adequate protection for her seaport Philadelphia.

Resolved, That it is incumbent upon our municipal authorities, upon the executive and legislature of Pennsylvania, and upon our representatives in Congress, to use all their influence in the approaching session at Washington toward securing the immediate extension and early completion of our maritime defences, and that they should invite for this purpose the co-operation of the proper authorities of New Jersey and Delaware.

Resolved, That a copy of these resolutions be transmitted by the secretary of the Board of Trade to the President of the United States, to our members of Congress, to the city councils, and to the legislature of Pennsylvania.

A true copy.

LORIN BLODGET, *Secretary*.

THE PUBLIC PRINTING.

ANNUAL REPORT

OF THE

SUPERINTENDENT OF PUBLIC PRINTING,

SHOWING

The condition of the Public Printing and Binding.

DECEMBER 12, 1861.—Laid on the table, and ordered to be printed.

OFFICE OF THE SUPERINTENDENT OF PUBLIC PRINTING,

Washington, December 11, 1861.

SIR: Herewith is submitted the ninth annual report of this office, showing the condition of the public printing, binding, &c., in order that it may be laid before the House.

Very respectfully, your obedient servant,

JNO. D. DEFREES,

Superintendent

Hon. G. A. GROW,

Speaker of the House of Representatives.

OFFICE SUPERINTENDENT OF PUBLIC PRINTING,

Washington, December 11, 1861.

The ninth annual report, showing "the cost and condition of the public printing, binding, and engraving," as required by law, is herewith submitted.

The law of 1852 provided for the election of a printer for each house of Congress, and fixed the rates of compensation. It also authorized the Printing Committee of each house to contract for the execution of the engraving and binding ordered by Congress.

This method was liable to so many objections other than those of a pecuniary character, as shown during its continuance, that Congress determined to make a change, and hence the joint resolution establishing a Government Printing Office, taking effect the 3d of last March, was adopted. Under its provisions an extensive printing establishment was purchased by my predecessor. This establishment has been under my charge since the 23d day of March last, and the result has been such as to vindicate the wisdom of Congress in making the change, as will be seen by the following details:

The printing and binding ordered by the 36th Congress being expressly excepted from the provisions of the joint resolution, the only portion of the printing of that Congress done in this establishment was that ordered by the House during the second session, (and a small portion remaining unfinished of the first session,) and that only in consequence of the resignation of the House printer. It will thus be seen that only a small amount, comparatively, of that work has been done in this establishment. The statement of its cost, however, compared with what it would have cost under the act of 1852, shows a saving of \$21,127 95 to the government. As compared with former prices paid for executive printing, there has been a saving of \$10,651 25; on blank books and ruling for the departments of \$8,084 60, and on the printing done for the extra session of the 37th Congress of \$3,628 66, making the whole amount saved from the 3d of March until the 31st of September, by the present mode, of \$43,492 46. As a large amount of work was done during the months of October and November, not included in the statements submitted, it is safe to say that a saving of at least \$60,000 has been effected up to the first of the present month.

As the law establishing the Government Printing Office made no change in the mode of having the engraving and lithographing ordered by Congress executed, this office has no other control over it than to see that it has been done according to the terms of the contracts made by the Printing Committees. It may be worth the consideration of Congress whether a saving may not also be effected in this branch of the public expenditures by directing it to be executed in the Government Printing Office.

The following statement shows the cost of so much of the printing for the Senate and House of Representatives as has been executed by the public printers since the last annual report from this office; together with the cost of paper, engravings and lithographs, binding, &c.

No. of document.	Title or subject.	No. of pages.	No. of copies.	Cost of composition, press-work, inserting maps and plates, &c.	Cost of dry-pressing.	Cost of paper.	Cost of lithographs and engravings.	Cost of binding extra copies.	Cost of binding reserved copies.	Total cost.	Cost per copy.
1	FOR THE SENATE.										
	<i>Executive documents.</i>										
	*Letter from the Commissioner of Patents, communicating certain Meteorological Observations. [Printed in part.] Quarto.....	400	3,000	\$624 00	\$78 12	\$1,190 11	.....	.....	.....	\$1,892 23	.....
	Annual Message of the President to Congress, and accompanying documents, (in three volumes).....	2,146	3,350	3,923 53	234 00	3,036 57	\$1,802 74	\$704 76	\$1,052 52	10,054 12	\$3 00
	Annual Message of the President, with the Reports of the Heads of Departments and Chiefs of Bureaus. [Part of Sen. Ex. Doc. No. 1.]	320	15,000	903 36	156 25	1,665 57	.....	1,957 54	.....	4,682 72	31½
	Annual Report of the Commissioner of Indian Affairs. [Part of Sen. Ex. Doc. No. 1.]	242	2,000	148 10	15 75	167 93	.....	260 87	.....	592 65	29½
	Annual Report of the Commissioner of the General Land Office. First edition. [Part of Sen. Ex. Doc. No. 1.]	194	1,000	75 06	.....	67 28	274 26	.....	.....	416 60	41½
	Annual Report of the Commissioner of the General Land Office. Second edition. [Part of Sen. Ex. Doc. No. 1.]	194	6,000	423 51	47 75	403 67	1,494 62	783 12	.....	3,152 67	52¼
	Annual Report of the Postmaster General. [Part of Sen. Ex. Doc. No. 1.]	164	1,000	58 38	.....	56 92	.....	.....	.....	115 30	11¼
	Annual Report of the Commissioner of Public Buildings. [Part of Sen. Ex. Doc. No. 1.]	18	500	6 80	.....	3 10	.....	.....	.....	9 90	2
	Annual Report of the Superintendent of Insane Asylum. [Part of Sen. Ex. Doc. No. 1.]	24	500	10 57	.....	3 88	34 97	.....	.....	49 42	10

* First session documents. The residue are for the second session.

Statement showing the cost of so much of the printing for the Senate and House of Representatives, &c.—Continued.

REPORT OF SUPERINTENDENT

No. of document.	Title or subject.	No. of pages.	No. of copies.	Cost of composition, press-work, inserting maps and plates, &c.	Cost of dry-pressing.	Cost of paper.	Cost of lithographs and engravings.	Cost of binding extra copies.	Cost of binding reserved copies.	Total cost.	Cost per copy.
	Annual Report of the Warden of the Penitentiary. [Part of Sen. Ex. Doc. No. 1.]	28	500	\$10 59	.....	\$4 92	.....	.....	.....	\$15 51	\$0 03
	Annual Report of the Officers of the Deaf, Dumb, and Blind Asylum. [Part of Sen. Ex. Doc. No. 1.]	16	500	6 05	.....	2 85	.....	.....	.....	8 90	1½
	Annual Report of the Engineer in Chief. [Part of Sen. Ex. Doc. No. 1.]	44	100	9 48	.....	1 55	.....	.....	.....	11 03	22
	Annual Report of the Chief of Topographical Engineers. [Part of Sen. Ex. Doc. No. 1.]	672	50	139 65	.....	12 16	.....	.....	.....	151 81	3 03½
6	Annual Report of the Secretary of State on Commercial Relations, (quarto)	744	6,550	3,149 68	\$317 25	4,735 88	.....	\$3,804 60	\$1,201 21	13,208 62	2 01½
7	Annual Report of the Commissioner of Patents on Arts and Manufactures, vol. 1	932	26,550	3,518 04	805 50	8,288 52	.....	3,255 71	350 84	16,218 61	61
7	Annual Report of the Commissioner of Patents on Arts and Manufactures, vol. 2	648	26,550	2,053 11	562 50	7,499 05	\$18,963 68	3,255 71	350 84	32,684 89	1 23
9	Report of Lieut. Michler of a Survey for an Interoceanic Ship Canal near the Isthmus of Darien	458	1,600	542 28	.....	441 67	2,299 44	.....	359 66	3,643 05	2 28
10	Correspondence in relation to Aves or Bird Island	472	4,050	577 47	38 38	573 19	.....	325 54	.....	1,514 58	37½
	Report of the Pacific Railroad Explorations and Surveys, vol. 11, (quarto)	124	10,000	809 66	80 75	1,205 07	17,833 72	7,609 97	.....	27,539 17	2 75½
	Annual Report of the Secretary of the Treasury on the State of the Finances	484	10,000	739 94	157 50	1,550 74	10 00	1,302 43	.....	3,760 61	37½
	All other Senate executive documents	218	1,550	267 89	.....	455 34	.....	.....	350 84	1,074 07	69½
	Miscellaneous documents.										
1	List of Committees of the Senate	4	3,800	7 06	.....	7 39	.....	.....	.....	14 45	½

3	Report of the Commission to examine into the organization, discipline, &c., of the Military Academy.....	352	6,550	608 30	75 00	881 20	.....	652 43	.....	2,216 93	33½
51	Annual Report of the Board of Regents of the Smithsonian Institution.....	448	6,550	735 25	95 00	1,077 11	.....	652 43	.....	2,559 79	39½
	All other Senate miscellaneous documents.....	204	1,550	217 26	.....	150 36	.....	.....	350 84	718 46	43½
	<i>Senate Committee Reports</i> , (complete in one volume).....	176	1,550	147 87	.....	132 61	.....	.....	350 84	631 32	40½
	<i>Bills and Joint Resolutions for the Senate</i>	1,084	700	576 30	.....	622 75	.....	.....	.....	1,199 05	.....
	<i>Senate Journal and Appendix</i>	568	1,550	490 91	.....	428 26	.....	.....	350 84	1,270 01	82
	<i>Treaties, &c.</i> , (confidential,) <i>for the Senate</i>	54	100	35 13	.....	2 53	.....	.....	.....	37 66	.....
	<i>Miscellaneous printing for the Senate, viz: General orders, circulars, blanks, &c.</i>.....	.....	.....	275 82	.....	91 00	.....	.....	.....	366 82	.....
	Total.....	.....	.....	20,391 05	2,663 75	34,759 18	42,713 43	24,565 11	4,718 43	129,810 95	.....
	FOR THE HOUSE OF REPRESENTATIVES.										
	<i>Executive documents.</i>										
	Letter from the Commissioner of Patents, communicating certain Meteorological Observations, (quarto.) [Printed in part].....	400	1,550	1,607 32	.....	602 39	.....	.....	.....	2,209 71	.....
	Annual Message of the President to Congress, and accompanying documents, (in three volumes).....	2,146	5,000	691 88	349 25	3,751 36	.....	1,878 09	.....	6,670 58	1 33½
	Annual Message of the President to Congress, with the Reports of the Heads of Departments and Chiefs of Bureaus.....	320	25,000	748 80	260 50	2,766 13	.....	3,137 40	.....	6,912 83	27½
	Annual Report of the Board of Regents of the Smithsonian Institution.....	448	5,000	339 40	73 00	739 43	.....	627 43	.....	1,779 26	35½
	Annual Report of the Commissioner of Patents on Arts and Manufactures, vol 1.....	932	40,000	3,489 41	1,213 50	12,302 58	.....	5,009 23	.....	22,014 72	55½
	Annual Report of the Commissioner of Patents on Arts and Manufactures, vol. 2.....	648	40,000	2,486 11	843 75	11,300 25	28,434 53	5,009 23	.....	48,073 87	1 20
	Report of Major Alfred Mordecai, U. S. A., on the War in the Crimea, (quarto).....	240	20,000	1,842 72	312 50	4,664 87	6,944 10	8,209 23	.....	21,973 42	1 09½
	Report of Major Richard Delafield, U. S. A., on the War in the Crimea, (quarto).....	304	20,000	2,786 11	395 75	5,908 71	39,250 65	8,209 23	.....	56,550 45	2 32½

REPORT OF SUPERINTENDENT

Statement showing the cost of so much of the printing for the Senate and House of Representatives, &c.—Continued.

No. of document.	Title or subject.	No. of pages.	No. of copies.	Cost of composition, press-work, inserting maps and plates, &c.	Cost of dry-pressing.	Cost of paper.	Cost of lithographs and engravings.	Cost of binding extra copies.	Cost of binding reserved copies.	Total cost.	Cost per copy.
1	Annual Report of the Secretary of the Treasury, communicating the Estimates of Appropriations	394	1,550	\$88 79	.....	\$303 07	.....	.....	.....	\$391 86	\$0 25½
2	Annual Report of the Secretary of the Treasury on the State of the Finances.....	484	17,550	1,866 29	\$276 50	3,056 96	\$10 00	\$2,007 97	.....	7,217 72	45½
	All other House executive documents, (in two volumes)	1,640	1,550	2,387 73	.....	1,260 70	50 00	.....	\$1,025 96	4,724 39	3 04½
	Miscellaneous documents for the House of Representatives.....	636	1,550	692 00	.....	479 35	20 00	.....	512 98	1,704 33	1 10
1	Reports of Committees.										
31	Report of the Select Committee on the Franking Privilege	16	11,550	43 97	.....	61 98	.....	.....	.....	105 95	1
	Report of the Select Committee on the Disturbed Condition of the Country	72	11,550	213 00	.....	291 88	.....	.....	.....	504 88	4½
	All other House Committee Reports, (in two volumes).....	1,256	1,550	1,043 08	.....	948 55	.....	.....	1,025 96	3,017 59	1 94½
	Reports of the Court of Claims for the House of Representatives..	170	1,550	140 31	.....	130 17	.....	.....	.....	270 48	.....
	Bills and Joint Resolutions for the House of Representatives.....	1,010	590	502 98	.....	508 25	.....	.....	.....	1,011 23	.....
	Miscellaneous printing for the House of Representatives—Calendar, General Orders, Circulars, &c.....	.....	.....	973 18	.....	219 15	.....	.....	.....	1,192 33	.....
	Total .....	.....	.....	21,943 06	3,724 75	49,295 78	74,709 28	34,087 81	2,564 90	186,325 60	.....

The following statement shows the cost of so much of the printing for the thirty-sixth Congress as has been executed in the Government Printing Office since its establishment on the fourth day of March, 1861, together with the cost of paper, engravings and lithographs, binding, &c.

No. of documents.	Title or subject.	Number of pages.	Number of copies.	Cost of composition, press-work, dry-pressing, folding, inserting maps and plates, &c.	Cost of paper.	Cost of lithographs and engravings.	Cost of binding extra copies.	Cost of binding reserved copies.	Total cost.	Cost per copy.
	FOR THE SENATE.									
	<i>Executive documents.</i>									
	*Letter from the Commissioner of Patents, communicating certain Meteorological Observations, (quarto.) [Printed in part.].....	1,074	3,000	\$1,178 23	\$3,131 17	... ..	\$2,281 48	.....	\$6,590 88	42 19½
	*Report on the Exploration of the River Colorado of the West, by Lieutenant J. C. Ives, Topographical Engineers, (quarto.).....	380	11,000	1,640 23	4,134 42	15,241 83	8,422 57	.....	29,439 05	2 67½
	Annual Report of the Superintendent of the Coast Survey, (quarto)	432	6,200	1,117 07	2,602 91	6,366 79	4,714 98	.....	14,801 75	2 38½
	Report of the Commissioner of Patents on Agriculture, for 1860	504	25,000	1,484 91	4,159 44	.....	3,255 71	.....	8,900 06	35½
1	(Special session.) Inaugural Address of the President of the United States	10	1,550	8 63	7 61	.....	.....	.....	16 24	.....
2	(Special session.) Communications from Major Steen and Lieutenant McMullin, relative to the movement of troops to the Pacific.....	8	1,550	6 90	6 15	.....	.....	.....	13 05	.....
	<i>Miscellaneous documents.</i>									
	(Special session.) The Morrill Tariff Bill.....	24	2,000	22 80	15 75	.....	.....	.....	38 55	.....
	(Special session.) An act to promote the Useful Arts, &c.....	8	2,000	7 60	5 41	.....	.....	.....	13 01	.....
	(Special session.) All other miscellaneous documents for the Senate	10	1,550	8 63	7 61	.....	.....	.....	16 24	.....
	Total.....	.....	.....	5,475 00	14,070 47	21,608 62	18,674 74	.....	59,828 83	.....

* First session documents. The residue are for the second session.

<i>Reports of the Court of Claims for the House of Representatives, (in three volumes)</i>	1,738	1,550	1,592 08	1,316 30	.....	.....	1,538 94	4,437 32	2 86½
<i>Journal of the House of Representatives</i>	584	1,676	587 23	440 22	.....	.....	577 30	1,604 75	95½
<i>Bills and Joint Resolutions for the House of Representatives</i>	106	590	54 99	52 40	.....	.....	.....	107 39	.....
Total.....	.....	.....	29,988 91	51,356 02	9,215 84	33,112 70	11,175 83	134,849 33	.....

* First session documents. The residue are for the second session.

RECAPITULATION.

	Senate.	House of Representatives.
Cost of printing, dry-pressing, and folding	\$28,529 80	\$55,656 74
Cost of paper.....	48,829 65	100,651 80
Cost of engravings and lithographs.....	64,322 05	83,925 12
Cost of binding reserved and extra copies	47,958 28	80,941 27
	189,639 78	321,174 93
	321,174 93	
Total cost of printing, binding, &c.....	510,814 71	

By the foregoing statements, it will be seen that the printing, paper, engraving, and binding, ordered by Congress at the second session of the 36th Congress, (including the Meteorological and Colorado reports which were ordered at the first session, but not printed,) amounts to the sum of \$510,814 71. The portion of this printing relinquished by the House printer, as heretofore stated, and executed in the Government Office, if charged at the prices established by the printing act of 1852, would have cost the sum of..... \$56,591 86

The amount drawn from the treasury to the 31st day of October, 1861, to pay for labor and materials in the execution of this work, is..... \$40,100 00

From which deduct cash on hand 4,636 09

Making the total cost 35,463 91

And effecting a saving of about 37½ per cent., or..... 21,127 95

FIRST SESSION THIRTY-SEVENTH CONGRESS.

The printing ordered at the late session of Congress has been completed, and the binding is nearly so: all of which has been, or is to be, executed by this office. The following statement shows the cost of paper, printing, dry-pressing, and folding, and the estimated cost of binding, viz:

	Senate.	Ho. of Reps.
Cost of printing, dry-pressing, and folding....	\$1,605 34	\$6,456 48
Cost of paper	1,307 62	7,746 55
Cost of binding reserved and extra copies	731 87	4,188 96
	3,644 83	18,391 99
	18,391 99	
Total cost of printing and binding....	22,036 82	

Had the printing, dry-pressing, and folding, been executed under the provisions of the printing act of 1852, it would have cost..	\$11,690 48
The amount drawn from the treasury to pay for labor and materials is.....	\$9,500 00
Indebtedness on account of this printing	1,236 89
Add balance due the Superintendent.....	2,687 01
	13,423 90
From which deduct the cost of materials purchased and on hand.....	5,362 08
And the net cost amounts to	8,061 82
Effecting a saving of about 31 per cent., or	3,628 66

In the foregoing statement the estimated saving in the cost of binding is put down at fifteen per cent., and will probably exceed that amount.

ENGRAVING, LITHOGRAPHING, AND ELECTROTYPING.

This class of work, for Congress, is placed by law under the control of the Committee on Printing of each house respectively, and has been executed under contracts made by those committees. The following statement will show the cost of the illustrations for the public documents executed during the present year, exclusive of the cost of paper; all of which were ordered at the second session of the 36th Congress, except those for the report of Lieutenant Ives on the exploration of the River Colorado of the West:

REPORT OF SUPERINTENDENT

Statement showing the cost of the illustrations of the public documents.

For what documents.	Names of contractors.	Kind of work.	Senate.	House.	Aggregate.
Maps in the President's message and documents.....	Julius Bien	Engraving and lithographing..	\$1,312 00	.....	\$1,312 00
Maps in the report of the Commissioner of the General Land Office.	do.....	Lithographing.....	883 97	.....	883 97
Maps for Lieutenant Michler's report, survey for ship canal	do.....	Engraving and lithographing ..	1,889 00	.....	1,889 00
Maps for Lieutenant Mullan's report.	do.....	do.....do.....	.....	\$40 00	40 00
Maps for the Coast Survey report, 1860,	A. Howen & Co.....	Engraving	175 00	.....	175 00
Do	do.....	Lithographing and printing...	3,217 18	3,399 22	6,616 40
Wood cut for the Coast Survey report, 1860	Van Ingen & Snyder.....	Engraving .....	.....	10 00	10 00
Wood cuts for report of Superintendent of Public Printing	do.....	do.....	.....	20 00	20 00
Wood cuts for report on rifled cannon.....	do.....	do.....	.....	50 00	50 00
Wood cuts for Colonel Delafield's report—Crimean war.....	do.....	do.....	.....	15 00	15 00
Wood cuts for the report of the Commissioner of Patents on Agriculture, 1860.....	do.....	Engraving and electrotyping ..	.....	450 00	450 00
*Geological maps for Lieutenant Ives's report—Colorado expedition	John Cassin	Printing and coloring.....	275 00	.....	275 00
*Wood cuts for Lieutenant Ives's report—Colorado expedition	Richard Major	Engraving and electrotyping ..	2,686 70	.....	2,686 70
*Maps and plates for Lieutenant Ives's report—Colorado expedition.....	do.....	Engraving and lithographing..	10,000 00	1,787 60	11,787 60
Maps for the eleventh volume of the Pacific Railroad surveys	John Cassin.....	Lithographing	11,000 00	.....	11,000 00
Maps and plates for Major Mordecai's report—Crimean war.....	E. R. Jewett	do.....	.....	5,375 73	5,375 73
Maps and plates for Colonel Delafield's report—Crimean war	do.....	do.....	.....	28,673 81	28,673 81
Illustrations for the Report of Commissioner of Patents on Arts and Manufactures, 1860.	do.....	Engraving and electrotyping ..	18,963 68	28,434 53	47,398 21
			50,402 53	68,255 89	118,658 42

* This document was ordered to be printed 1st session 36th Congress.

PRINTING FOR THE EXECUTIVE DEPARTMENTS.

The last annual report from this office gave a statement of the cost of the paper and printing for the executive departments of the government for the fiscal year ending June 30, 1860. This class of work was continued in the hands of the printer to the Senate, where it had been placed by my predecessor, until the 3d of March last, a period of eight months. The following statement shows the cost for paper and printing during that time viz :

Department.	Cost of printing.	Cost of paper.	Total cost.
State Department	\$354 86	\$289 68	\$644 54
Treasury Department	2, 367 64	1, 455 14	3, 822 78
Interior Department	4, 708 19	1, 149 27	5, 857 46
War Department	3, 434 45	2, 207 69	5, 642 14
Navy Department	2, 193 62	1, 655 67	3, 849 29
Post Office Department	1, 330 53	1, 283 36	2, 613 89
Office of the President United States	22 60	9 60	32 20
Office of the Attorney General ..	41 56	8 60	50 16
Office of the Court of Claims ..	1, 141 11	29 35	1, 170 46
Office of the Superintendent of Public Printing	15 92	4 86	20 78
Statement of Commerce and Navigation	3, 503 37	4, 708 77	8, 212 14
Estimates of appropriations ..	439 34	57 35	496 69
Total	19, 553 19	12, 859 34	32, 412 53

Since the 3d of March last this class of printing has been executed by this office, and has been very largely increased by the requirements of the War Department for printing in consequence of the rebellion. The following statement embraces all the printing ordered from the 3d of March to the 30th of September, 1861, a period of seven months, with its actual cost, compared with the cost of the same printing at the prices established by the act of 1852:

Department, &c.	Cost of printing under the act of 1852.	Actual cost.	Cost of paper.	Total cost.
State Department	\$361 75	\$242 37	\$74 86	\$317 23
Treasury Department	5, 289 23	3, 543 79	2, 548 93	6, 092 72
Interior Department	3, 879 15	2, 599 04	1, 136 12	3, 735 16
War Department	15, 393 33	10, 313 53	10, 350 49	20, 654 02
Navy Department	5, 261 83	3, 540 45	3, 069 34	6, 609 79
Post Office Department	1, 785 82	1, 196 50	1, 172 58	2, 369 08
Office of President of United States	33 45	22 41	9 56	31 97
Office of Attorney General	20 10	13 47	6 36	19 83
Office of Court of Claims	219 40	147 00	4 40	151 40
Office of Superintendent of Public Printing	77 57	51 87	29 70	81 57
	32, 321 68	21, 670 43	18, 402 34	40, 072 77

From the foregoing statement it will be perceived that the printing for the executive departments, for the period of seven months, if paid for at the prices established by the printing act of 1852, would have cost the sum of	\$32,321 68
And that the actual cost was	21,670 43
Effecting a saving of	10,651 25

BLANKS FOR THE POST OFFICES OF THE UNITED STATES.

In accordance with the fifth section of the act approved February 15, 1860, the printing of these blanks was given out by contract, for four years, commencing on the 1st of April, 1860. The following statement shows their monthly cost for the year ending September 30, 1861:

Months.	Cost of printing.	Cost of paper.	Total cost.
1860—October	\$904 14	\$4,233 91	\$5,138 05
November	756 86	3,528 68	4,285 54
December	810 50	3,873 18	4,683 68
1861—January	834 60	3,110 38	3,944 98
February	722 43	2,847 08	3,569 51
March	712 15	2,607 34	3,319 49
April	833 37	3,926 25	4,759 62
May	1,650 19	6,766 15	8,416 34
June	968 66	3,497 65	4,466 31
July	1,127 11	4,198 70	5,325 81
August	947 10	3,146 65	4,093 75
September	756 11	2,913 56	3,669 67
Total	11,023 22	44,649 53	55,672 75

The average monthly cost of these blanks for the year has been about the same as for the previous six months, and shows a very large saving on the prices previously paid.

THE PUBLIC BINDING.

The binding of the *reserved* and *extra* documents ordered by the Senate and House of Representatives during the 36th Congress was given out by contract previously to the passage of the "joint resolution in relation to the public printing;" and, therefore, none of it has been executed in the government bindery. The cost of this work for the second session of that Congress, when completed, (the details of which are elsewhere embraced in this report,) will be as follows:

Reserved binding for the Senate	\$4,718 43	
Extra	43,239 85	
		\$47,958 28
Reserved binding for the House	13,740 76	
Extra	67,200 51	
		80,941 27
Total		128,899 55

The public documents ordered to be printed at the first session of the 37th Congress, being inconsiderable in number, are to be bound in this establishment, and their cost is estimated at fifteen per cent. less than the prices paid, under contract, by the 36th Congress.

Therefore, the only work executed in this establishment for the government has been the making of blank books, binding, machine ruling, &c., for the executive departments since the 3d day of March last. The following statement exhibits the cost of the work executed for the eight months ending on the 31st day of October, 1861, compared with the cost heretofore paid for work of similar character, showing a saving on the small quantity of work executed of \$8,084 01, or about one thousand dollars per month:

Department and bureau.	Cost at former prices.	Amount charged and paid.
Department of State	\$1, 321 87	\$1, 123 61
Treasury Department—		
Secretary's office.....	560 90	476 78
Comptroller's office	7 25	6 16
Second Auditor's office.....	519 95	441 97
Third Auditor's office.....	15 85	13 48
Fourth Auditor's office	141 20	120 02
Fifth Auditor's office.....	82 00	69 71
Sixth Auditor's office.....	1, 001 55	851 32
Register's office	1, 314 32	1, 121 72
Construction office.....	16 00	13 60
Coast Survey office	419 99	357 00
Office of the Light-house Board.....	578 54	491 77
Interior Department—		
Secretary's office	369 43	313 38
Census Office.....	175 90	149 52
General Land Office.....	2, 301 69	1, 954 73
Patent Office	169 30	143 90
Patent Office library.....	37 01	31 46
Patent Office—Agricultural division .	144 56	122 88
Indian Office	28 30	24 06
Pension Office	174 99	148 75
Document room.....	105 80	89 93
Commissioner Public Buildings	28 81	24 49
War Department—		
Secretary's office	94 99	80 74
Adjutant General's office.....	9, 865 57	8, 385 83
Quartermaster General's office	2, 699 96	2, 294 97
Subsistence office	1, 197 89	1, 030 96
Paymaster General's office	142 87	121 44
Surgeon General's office.....	243 25	206 77
Bureau Topographical Engineers.....	68 50	58 23
Ordnance office	574 97	488 72
Navy Department—		
Secretary's office	332 78	283 87
Bureau of Yards and Docks.....	16 90	14 37
Bureau of Construction, Equipment, and Repair.....	74 00	62 90

Statement—Continued.

Department and bureau.	Cost at former prices.	Amount charged and paid.
Navy Department—Continued.		
Bureau of Provisions and Clothing..	\$3, 317 16	\$2, 819 59
Bureau of Ordnance and Hydrography.	152 25	129 41
Bureau of Medicine and Surgery....	52 75	44 84
Post Office Department.....	659 19	560 32
Office of the Superintendent Public Printing.	201 89	171 61
Senate of the United States	118 29	100 55
House of Representatives	83 50	70 98
	29, 411 92	25, 016 34
To which add as follows:		
Amount due and unpaid for work executed and returned.....	7, 591 74	6, 455 28
Estimated value of work in an unfinished state.	8, 166 00	6, 941 10
	45, 169 66	38, 412 72
	38, 412 72	
Amount saved on the work above stated....	6, 756 94	

From the foregoing statement it appears that the saving to the government on the work therein mentioned, as compared with the prices heretofore paid for work of a similar character, is... \$6, 756 94

To which should be added the amount paid for materials and machinery on hand, which were purchased out of the proceeds of binding, as follows:

Cost of materials unused.....	\$4, 348 40	
Cost of machinery purchased.....	1, 756 50	
		6, 104 90

	12, 861 84
From which deduct the indebtedness of the bindery.....	4, 777 83

Making the aggregate amount saved to government.....	8, 084 01
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PAPER FOR THE PUBLIC PRINTING, BINDING, AND ENGRAVING.

The following statement exhibits the quantity and cost of the paper purchased for the public printing, binding, and engraving for the year ending December 1, 1861, and is communicated in obedience to the requirements of the ninth section of the joint resolution of June 23, 1860, viz:

Statement exhibiting cost and quality of paper.

Quantities and kinds of paper.	Weight per ream.	Cost per ream.	Cost.	Total.
PRINTING PAPER.				
	<i>Lbs.</i>			
22,497 reams, 24 by 38 inches..	45	\$4 92.3	\$110,752 73	
3,000..do.....do.....	50	6 50	19,500 00	
10,238..do.....do.....	56	7 24.64	74,188 64	
300..do.. 24 by 32 inches..	48	6 24	1,872 00	
				\$206,313 37
WRITING PAPER.				
2,000 reams quarto post.....	8	1 60	3,200 00	
1,100..do.. flat cap.....	12	2 19	2,409 00	
800..do.....do.....	14	2 55½	2,044 00	
200..do.....do.....	16	2 92	584 00	
3,000..do.. folio post.....	16	2 88	8,640 00	
1,400..do.....do.....	20	3 60	5,040 00	
100..do.....do.....	30	5 40	540 00	
500..do.. double cap.....	24	4 32	2,160 00	
100..do.....do.....	28	5 04	504 00	
550..do.. medium.....	26	4 68	2,574 00	
125..do.....do.....	30	5 40	675 00	
50..do.. royal.....	44	7 92	396 00	
50..do.. superroyal.....	56	10 36	518 00	
80..do.. imperial.....	66	12 04½	963 60	
100..do.. demy.....	26	4 68	468 00	
6..do.. buff medium.....		7 00	42 00	
50..do.. buff cap.....		2 40	120 00	
500..do.. semi-parchment...	8	1 60	800 00	
250..do.....do.....	12	2 40	600 00	
200..do.....do.....	16	3 20	640 00	
100..do.....do.....	17	3 40	340 00	
50..do.....do.....	22	4 40	220 00	
900..do.....do.....	20	4 00	3,600 00	
100..do.....do.....	23	4 60	460 00	
740..do.....do.....	32	6 40	4,736 00	
				42,273 60
PAPER FOR POST OFFICE BLANKS.				
1,050 reams, 12 by 18 inches..	12	1 56	1,638 00	
1,000..do.. 18 by 18..do...	22	2 75	2,750 00	
500..do.. 18 by 22..do...	24	3 00	1,500 00	
3,000..do.. 18 by 25..do...	26	3 38	10,140 00	
10,000..do.. 16 by 26..do...	23	2 87½	28,750 00	
				44,778 00
PAPER FOR ENGRAVINGS.				
<i>Plate paper.</i>				
85½ reams, 19 by 24 inches..	50	9 50	816 05	
21½..do.. 20 by 24..do....	53	10 07	216 00	

Statement exhibiting cost and quality of paper—Continued.

Quantities and kinds of paper.	Weight per ream.	Cost per ream.	Cost.	Total.
	<i>Lbs.</i>			
368 $\frac{9}{20}$ reams, 19 by 24 inches ..	60	\$11 40	\$4,200 33	
42 $\frac{18}{20}$..do.. 24 by 32 ..do....	84	15 96	684 68	
<i>Map paper.</i>				
140,042 pounds of various sizes, at 17 $\frac{1}{4}$ cents			24,157 24	
				\$30,074 30
PAPER FOR THE BINDERY.				
45 reams imperial		20 00	900 00	
70 ..do.. superroyal		16 00	1,120 00	
106 ..do.. royal		13 00	1,378 00	
105 ..do.. medium		9 00	945 00	
195 ..do.. demy		7 00	1,365 00	
105 ..do.. ..do		6 00	630 00	
1,240 ..do.. ..do		5 00	6,200 00	
514 ..do.. folio post		4 50	2,313 00	
18 ..do.. double cap		9 00	167 00	
21 ..do.. ..do		8 00	168 00	
60 ..do.. flat cap		4 00	240 00	
690 ..do.. ..do		3 50	2,415 00	
2 ..do.. cover		5 50	11 00	
2 ..do.. envelope		4 00	8 00	
1 $\frac{1}{2}$..do.. wrapping		6 00	9 00	
9 ..do.. manilla		11 70	105 30	
2 ..do.. ..do		7 00	14 00	
1 ..do.. marble		16 00	16 00	
2 ..do.. ..do		13 00	26 00	
1 $\frac{1}{2}$..do.. ..do		12 00	18 00	
5 $\frac{1}{4}$..do.. ..do		10 00	52 50	
22 $\frac{1}{4}$..do.. ..do		8 00	178 00	
				18,278 80
				341,718 07

NUMBER OF HANDS EMPLOYED.

It is declared by the second section of the joint resolution of June 23, 1860, "that the Superintendent shall at no time employ more hands in the public printing and binding establishment than the absolute necessities of the public work may require; and, further, that the Superintendent report to Congress, at the beginning of each session of Congress, the number of hands so employed, and the length of time each has been employed."

No larger force has been or will be employed in this branch of the public service than its wants absolutely demand, and none are employed except such as are competent to the discharge of the duties required of them. The following statement is given in compliance with the last clause of resolution above quoted, and is made up to the 31st day of October, 1861:

Statement of persons employed in the public printing up to October 31, 1861.

Names.	Pay per day.	Time employed.	Aggregate amount.	Remarks.
		<i>Days. hours.</i>		
James English.....	.....	242 0	\$1, 189 63	Salary, \$1,800 per annum.
John Larcombe.....	\$4 16 ² / ₃	14 0	58 33	
P. L. Rodier.....	4 16 ² / ₃	10 0	41 67	
John McLeod.....	4 16 ² / ₃	17 0	70 83	
James King.....	4 16 ² / ₃	183 0	762 50	
T. S. De Vaughan.....	3 33 ¹ / ₃	203 0	676 67	
E. M. Spedden.....	3 33 ¹ / ₃	207 0	697 68	Including \$7 68 for extra work.
M. T. Lincoln.....	3 33 ¹ / ₃	208 0	748 74	Including \$55 41 for extra work.
John McLeod.....	3 00	184 0	561 72	Including \$9 72 for extra work.
E. J. Burnham.....	2 83 ¹ / ₃	187 0	541 81	Including \$11 98 for extra work.
William Franklin.....	2 83 ¹ / ₃	206 2	593 85	Including \$9 62 for extra work.
G. C. Forbes.....	2 83 ¹ / ₃	195 5	569 59	Including \$15 67 for extra work.
J. C. Franzoni.....	2 66 ² / ₃	201 0	536 00	
John McLeod.....	2 66 ² / ₃	6 0	16 00	
George Gordon.....	2 66 ² / ₃	165 5	443 25	Including \$1 92 for extra work.
Charles D. Parsons.....	2 66 ² / ₃	201 2 ¹ / ₂	538 59	Including \$1 92 for extra work.
Joseph Blackie.....	2 66 ² / ₃	160 5	429 92	Including \$1 92 for extra work.
David Reeves.....	2 66 ² / ₃	112 2 ¹ / ₂	301 25	Including \$1 92 for extra work.
Robert Taylor.....	2 66 ² / ₃	206 0	557 97	Including \$8 64 for extra work.
T. F. Maher.....	2 66 ² / ₃	170 7 ¹ / ₂	461 89	Including \$6 56 for extra work.
W. S. Scott.....	2 66 ² / ₃	150 2 ¹ / ₂	402 59	Including \$1 92 for extra work.
Joseph Johnson.....	2 66 ² / ₃	124 0	330 67	Including \$1 92 for extra work.
Oliver Reed.....	2 66 ² / ₃	84 5	227 25	Including \$1 92 for extra work.
John Metcalf.....	2 66 ² / ₃	130 5	349 92	Including \$1 92 for extra work.
John Burnside.....	2 66 ² / ₃	73 5	197 92	Including \$1 92 for extra work.

Statement of persons employed in the public printing, &c.—Continued.

Names.	Pay per day.	Time employed.	Aggregate amount.	Remarks.
		<i>Days. hours.</i>		
J. S. Jones	\$2 66 $\frac{2}{3}$	15 5	\$41 33	
O. C. Fisher	2 66 $\frac{2}{3}$	46 0	122 67	
J. W. Harrison	2 50	195 5	488 75	
William Robinson	2 50	198 0	512 34	Including \$17 34 for extra work.
E. N. Gray	2 50	169 5	423 75	
Madison Davis	2 50	197 0	493 78	Including \$1 28 for extra work.
W. D. Fowler	2 50	181 7 $\frac{1}{2}$	454 37	
W. J. Frizzell	2 50	50 6	126 50	
Rollin Defrees	2 50	158 5	405 43	Including \$9 18 for extra work.
A. C. Shaw	2 50	200 7 $\frac{1}{2}$	502 51	Including 64 cents for extra work.
W. S. Brooks	2 50	190 3	483 55	Including \$7 80 for extra work.
F. J. Waters	2 50	205 3 $\frac{1}{2}$	520 05	Including \$6 68 for extra work.
George Cochran	2 50	182 0	457 88	Including \$2 88 for extra work.
C. W. Schell	2 50	205 7 $\frac{1}{2}$	520 41	Including \$6 04 for extra work.
W. S. Miles	2 50	145 1 $\frac{1}{2}$	366 83	Including \$3 96 for extra work.
G. A. R. McNeir	2 50	154 5	390 53	Including \$4 28 for extra work.
G. W. Hall	2 50	179 4	449 14	Including 64 cents for extra work.
F. R. Reading	2 50	193 2	494 65	Including \$11 65 for extra work.
Robert Penman	2 50	188 5 $\frac{1}{2}$	477 89	Including \$6 52 for extra work.
W. H. H. Towers	2 50	152 6	381 50	
E. R. Spurr	2 50	192	482 56	Including \$2 56 for extra work.
J. D. Chedal	2 50	105 2 $\frac{1}{2}$	277 10	Including \$13 98 for extra work.
W. L. Jones	2 50	34 0	85 00	
James Jack	2 50	194 2 $\frac{1}{2}$	490 58	Including \$4 96 for extra work.
O. C. Ketcham	2 50	194 7 $\frac{1}{2}$	490 39	Including \$3 52 for extra work.

James Fullerton	2	50	188	5	472	05	Including 80 cents for extra work.
Eugene Laporte	2	50	204	5	517	29	Including \$6 04 for extra work.
Abram Cook	2	50	36	0	90	00	
W. E. Nott	2	50	198	5	498	33	Including \$2 08 for extra work.
J. P. Boss	2	50	207	0	535	62	Including \$18 12 for extra work.
E. B. Robinson	2	50	24	0	60	00	
N. W. King	2	50	100	0	250	64	Including 64 cents for extra work.
George Caton	2	50	35	0	87	50	
E. H. Edmonston	2	50	188	7½	496	37	Including \$24 50 for extra work.
David Wiber	2	50	192	2	480	50	
J. C. C. Whaley	2	50	187	3	471	25	Including \$3 for extra work.
W. M. Belt	2	50	143	9	359	75	
F. M. Detwiler	2	50	11	5	28	75	
J. C. Rowan	2	50	59	8½	152	62	Including \$3 for extra work.
J. H. Thorn	2	50	13	0	32	50	
R. S. Middleton	2	50	70	5	179	73	Including \$3 48 for extra work.
Daniel Smith	2	50	60	5	157	61	
C. B. Wright	2	33½	143	7	335	30	
C. B. Hough	2	33½	186	1	434	23	
G. W. Scriver	2	33½	170	6½	399	14	
C. M. Murphy	2	33½	79	4	185	26	Including 96 cents for extra work.
D. P. Hickling	2	33½	141	8	334	63	
J. M. F. Hough	2	33½	15	0	35	00	Including \$3 76 for extra work.
W. D. Gourlay	2	33½	37	0	86	33	
C. J. Bartram	2	33½	32	5	75	83	
W. A. De Caindry	2	33½	15	5	36	17	
C. D. Cushing	2	33½	15	5	36	17	
Wm. Baum	2	33½	14	0	32	67	
Wm. Fleming	2	33½	191	5	449	76	Including \$2 93 for extra work.
M. R. Woodward	2	33½	189	6½	444	76	Including \$2 24 for extra work.
W. W. Maloney	2	33½	139	2½	326	04	Including \$1 12 for extra work.
C. D. McPherson	2	33½	36	0	84	00	
Charles White	2	33½	45	7½	106	75	

Statement of persons employed in the public printing, &c.—Continued.

Names.	Pay per day.	Time employed.	Aggregate amount.	Remarks.
		<i>Days. hours.</i>		
F. Pitman	\$2 33 $\frac{1}{3}$	27 5	\$64 17	
S. McElwee, jr	2 33 $\frac{1}{3}$	30 0	70 00	
L. F. Clements	2 33 $\frac{1}{3}$	28 0	65 33	
R. P. Luckett	2 33 $\frac{1}{3}$	30 0	70 00	
C. W. Robinson	2 33 $\frac{1}{3}$	156 0	365 92	Including \$1 92 for extra work.
J. Auge	2 33 $\frac{1}{3}$	117 2 $\frac{1}{2}$	276 70	Including \$3 12 for extra work.
G. H. Randall	2 33 $\frac{1}{3}$	151 7 $\frac{1}{2}$	356 80	Including \$2 72 for extra work.
B. Milburn	2 33 $\frac{1}{3}$	30 5	71 17	
T. Harper	2 33 $\frac{1}{3}$	167 0	396 72	Including \$5 88 for extra work.
W. F. Farish	2 33 $\frac{1}{3}$	29 5	68 83	
H. H. B. Arnold	2 33 $\frac{1}{3}$	164 9 $\frac{1}{2}$	390 28	Including \$5 40 for extra work.
C. Klopfer	2 33 $\frac{1}{3}$	113 0	263 67	
Joseph Crandell	2 33 $\frac{1}{3}$	87 2 $\frac{1}{2}$	203 58	
C. T. Allen	2 33 $\frac{1}{3}$	154 4 $\frac{1}{2}$	365 94	
John Campbell	2 33 $\frac{1}{3}$	143 0	334 47	Including 80 cents for extra work.
C. J. Canfield	2 33 $\frac{1}{3}$	27 0	63 00	
R. W. Claxton	2 33 $\frac{1}{3}$	29 7 $\frac{1}{2}$	69 42	
James Charles	2 33 $\frac{1}{3}$	147 5	345 66	Including \$1 49 for extra work.
H. L. Davison	2 33 $\frac{1}{3}$	156 9	372 41	Including \$6 32 for extra work.
Josiah Melvin	2 33 $\frac{1}{3}$	169 4	401 27	Including \$6 for extra work.
E. R. Brown	2 33 $\frac{1}{3}$	147 5	346 97	Including \$2 80 for extra work.
J. Hurley	2 33 $\frac{1}{3}$	158 0	375 31	Including \$6 64 for extra work.
Aug. Rodgers	2 33 $\frac{1}{3}$	125 8 $\frac{1}{2}$	296 20	Including \$2 56 for extra work.
Joseph Rogers	2 33 $\frac{1}{3}$	64 5	150 98	Including 48 cents for extra work.
E. Mac Murray	2 33 $\frac{1}{3}$	143 0	337 55	Including \$3 89 for extra work.
J. K. Shoemaker	2 33 $\frac{1}{3}$	114 6	268 20	Including 80 cents for extra work.

J. B. Towers.....	2	33 $\frac{1}{2}$	113	2 $\frac{1}{2}$	267	77	Including \$3 52 for extra work.
J. B. Crangle.....	2	33 $\frac{1}{2}$	36	4	84	93	
J. J. Williamson.....	2	33 $\frac{1}{2}$	24	0	56	00	
J. F. Crow.....	2	33 $\frac{1}{2}$	95	0	224	46	Including \$2 80 for extra work.
W. C. Shay.....	2	33 $\frac{1}{2}$	96	6	225	39	
Charles Eve.....	2	33 $\frac{1}{2}$	30	6	71	40	
M. A. Haffee.....	2	33 $\frac{1}{2}$	35	0	81	67	
F. A. Goodnough.....	2	33 $\frac{1}{2}$	18	0	42	00	
John Bowen.....	2	33 $\frac{1}{2}$	37	0	86	33	
L. R. Fechtig.....	2	33 $\frac{1}{2}$	52	0	121	33	
John Davies.....	2	33 $\frac{1}{2}$	79	0	187	42	Including \$3 09 for extra work.
S. H. Mathers.....	2	33 $\frac{1}{2}$	44	0	102	67	
A. L. Settle.....	2	33 $\frac{1}{2}$	63	0	147	96	
H. F. Barnard.....	2	33 $\frac{1}{2}$	10	0	23	33	Including 96 cents for extra work.
J. W. Connell.....	2	33 $\frac{1}{2}$	7	0	16	33	
J. Melson.....	2	33 $\frac{1}{2}$	3	0	7	00	
A. R. Bennett.....	1	71 $\frac{3}{4}$	242	0	414	86	
J. D. Burt.....	1	71 $\frac{3}{4}$	153	0	262	29	
Richard Kelly.....	1	71 $\frac{3}{4}$	161	0	276	00	
Charles Shaffer.....	1	71 $\frac{3}{4}$	60	0	102	86	
J. T. Whittaker.....	1	71 $\frac{3}{4}$	242	0	414	86	
James McKenney.....	1	71 $\frac{3}{4}$	242	0	414	86	
Jacob McHanney.....	1	66 $\frac{2}{3}$	202	0	337	87	Including \$1 20 for extra work.
L. A. Iardella.....	1	66 $\frac{2}{3}$	203	5	339	17	
Ephraim Dorsey.....	1	50	198	0	302	20	Including \$5 20 for extra work.
James Cole.....	1	50	5	0	7	50	
J. F. Larcombe.....	1	50	162	5	243	75	
Edward Malone.....	1	33 $\frac{1}{2}$	208	0	281	33	Including \$4 for extra work.
Lot Cullinan.....	1	33 $\frac{1}{2}$	202	0	270	53	Including \$1 20 for extra work.
Dennis McNamara.....	1	33 $\frac{1}{2}$	206	0	275	87	Including \$1 20 for extra work.
George Dice.....	1	33 $\frac{1}{2}$	178	0	237	33	
Timothy Malone.....	1	33 $\frac{1}{2}$	172	0	234	73	Including \$5 40 for extra work.
Patrick Bolton.....	1	33 $\frac{1}{2}$	10	0	13	33	

Statement of persons employed in the public printing, &c.—Continued.

Names.	Pay per day.	Time employed.	Aggregate amount.	Remarks.
		<i>Days. hours.</i>		
B. F. Larcombe.....	\$1 33 $\frac{1}{2}$	75 5	\$100 67	
John Schofield	1 33 $\frac{1}{2}$	179 0	239 87	Including \$1 20 for extra work.
John Bush.....	1 28 $\frac{1}{2}$	242 0	311 14	
George Slim.....	1 16 $\frac{3}{4}$	182 0	212 33	
Franklin Chew	1 00	81 0	81 00	
W. W. Maloney	83 $\frac{1}{2}$	48 0	40 00	
Charles Sheer	83 $\frac{1}{2}$	208 0	173 33	
C. M. Towers	83 $\frac{1}{2}$	43 0	35 83	
D. Harbaugh.....	83 $\frac{1}{2}$	208 0	173 33	
William Baum.....	83 $\frac{1}{2}$	189 0	157 50	
S. A. Davis	83 $\frac{1}{2}$	27 0	22 50	
Jesse Rose.....	83 $\frac{1}{2}$	184 0	153 33	
James H. Bush.....	83 $\frac{1}{2}$	7 0	5 83	
Hugh McLeod.....	83 $\frac{1}{2}$	138 0	116 20	Including \$1 20 for extra work.
R. A. Porter	83 $\frac{1}{2}$	161 2 $\frac{1}{2}$	136 36	Including \$2 for extra work.
Sarah Meredith.....	83 $\frac{1}{2}$	207 0	175 87	Including \$3 37 for extra work.
Jennie Germon	83 $\frac{1}{2}$	207 0	175 87	Including \$3 37 for extra work.
Annie Mitchell.....	83 $\frac{1}{2}$	202 0	172 90	Including \$4 57 for extra work.
Martha Cook.....	83 $\frac{1}{2}$	206 0	175 04	Including \$3 37 for extra work.
Rebecca Myers	83 $\frac{1}{2}$	37 0	30 83	
Eliza Scott.....	83 $\frac{1}{2}$	16 0	13 33	
Hannah Miles	83 $\frac{1}{2}$	196 0	164 45	Including \$1 12 for extra work.
Emma Moreland.....	83 $\frac{1}{2}$	155 0	129 92	Including 75 cents for extra work.
Johanna Brady.....	83 $\frac{1}{2}$	38 0	31 67	
Annie Suddeth	83 $\frac{1}{2}$	200 5	167 83	Including 75 cents for extra work.
Kate Cavanaugh.....	83 $\frac{1}{2}$	195 2 $\frac{1}{2}$	163 46	Including 75 cents for extra work.

Jane Moreland	83½	200	7½	168 04	Including 75 cents for extra work.
Mary Cohill	83½	198 0		165 75	Including 75 cents for extra work.
Louisa Payne	83½	195 5		163 29	Including 37 cents for extra work.
Annie Kellen	83½	189 0		158 25	Including 75 cents for extra work.
Mary Burns	83½	63 5		52 71	
Eliza Giddings	83½	44 7½		37 29	
Sarah Blades	83½	122 0		102 42	Including 75 cents for extra work.
Alice Mills	83½	110 2½		94 82	Including \$2 94 for extra work.
Ellen V. Smith	83½	115 7½		99 01	Including \$2 56 for extra work.
Mary E. Lewis	83½	158 5		132 84	Including 75 cents for extra work.
S. A. Murray	83½	157 0		131 58	Including 75 cents for extra work.
E. A. Stewart	83½	124 5		104 50	Including 75 cents for extra work.
J. A. Miller	83½	118 5		101 75	Including \$3 for extra work.
Mary Miller	83½	164 5		140 09	Including \$3 for extra work.
Sarah Russell	83½	140 0		117 42	Including 75 cents for extra work.
Henrietta Payne	83½	127 5		107 00	Including 75 cents for extra work.
Sarah Webster	83½	160 5		135 25	Including \$1 50 for extra work.
Elizabeth Lacey	83½	75 0		62 87	Including 37 cents for extra work.
Eliza Parrott	83½	119 7½		100 16	Including 37 cents for extra work.
Bridget Campbell	83½	71 0		59 92	Including 75 cents for extra work.
Rebecca Murray	83½	147 7½		123 87	Including 75 cents for extra work.
Jane Stansbury	83½	35 5		29 58	Including 75 cents for extra work.
Rebecca Shedd	83½	2 0		1 67	
Julia Collins	83½	48 2½		40 21	
Frederick Hall	83½	15 0		12 50	
James H. Bush	1 00	148 7½		148 75	
A. Gordon	75	27 0		20 25	
A. Gordon	66⅔	176 0		117 33	
John Callighan	66⅔	43 0		28 67	
Ralph Jefferson	66⅔	208 0		138 67	
S. McGonegal	66⅔	203 5		135 67	
J. E. Dowling	66⅔	121 0		80 67	
Jesse Rose	66⅔	24 0		16 00	

Statement of persons employed in the public printing, &c.—Continued.

Names.	Pay per day.	Time employed.	Aggregate amount.	Remarks.
		<i>Days. hours.</i>		
C. J. De Vaughan	\$0 66 ² / ₃	26 0	\$17 33	Including 75 cents for extra work.
James Edmonston	66 ² / ₃	35 0	24 08	Including 75 cents for extra work.
Joseph Thomas	66 ² / ₃	88 5	59 75	
Thomas Bennett	66 ² / ₃	167 0	111 33	
Frederick Hall	66 ² / ₃	91 5	61 75	Including 75 cents for extra work.
William Heatley	66 ² / ₃	2 0	1 33	
Samuel Hurley	66 ² / ₃	76 0	50 67	
John Taylor	66 ² / ₃	141 0	94 75	
John Gray	66 ² / ₃	57 0	52 08	Including 75 cents for extra work.
Jacob Smith	66 ² / ₃	37 0	25 04	Including 75 cents for extra work.
Joseph Crown	66 ² / ₃	118 5	79 75	Including 37 cents for extra work.
Joseph Goodrich	66 ² / ₃	46 5	31 00	Including 75 cents for extra work.
M. Rhyon	66 ² / ₃	200 5	133 67	
William Davis	66 ² / ₃	109 5	73 00	
William Bush	66 ² / ₃	190 0	126 67	
J. H. Becker	66 ² / ₃	190 0	126 67	
J. S. Clayton	66 ² / ₃	163 0	108 67	
J. F. Fennell	66 ² / ₃	162 0	108 00	
E. Campbell	66 ² / ₃	161 5	107 67	
W. H. May	66 ² / ₃	78 5	52 33	
Joseph Ratcliff	66 ² / ₃	145 0	96 67	
George Lewis	66 ² / ₃	145 0	96 67	
J. R. Sommers	66 ² / ₃	39 0	26 00	
C. J. De Vaughan	\$58 ¹ / ₃	176 0	102 67	
Charles Wall	58 ¹ / ₃	184 0	107 33	

Statement of persons employed in the public printing, &c.—Continued.

Names.	Pay for—	Time employed.	Aggregate amount.	Remarks.
S. Adams.....	Piece work.	.....	\$204 23	
K. Ward.....	do.....	.....	155 87	
H. Howard.....	do.....	.....	189 06	
K. Shortell.....	do.....	.....	219 73	
E. Heffell.....	do.....	.....	167 92	
M. Daily.....	do.....	.....	45 54	
C. Maus.....	do.....	.....	145 77	
L. Piggott.....	do.....	.....	153 27	
E. McCarty.....	do.....	.....	155 79	
M. Whaley.....	do.....	.....	136 26	
E. French.....	do.....	.....	68 75	
R. Davis.....	do.....	.....	127 94	
S. Waters.....	do.....	.....	133 56	
W. White.....	do.....	.....	75 80	
F. Sage.....	do.....	.....	59 26	
A. Shaw.....	do.....	.....	107 79	
M. Brick.....	do.....	.....	112 66	
M. Hunt.....	do.....	.....	55 52	
A. Harrison.....	do.....	.....	159 57	
T. Harrison.....	do.....	.....	103 77	
K. Sage.....	do.....	.....	184 64	
A. Feeney.....	do.....	.....	81 63	
C. Wright.....	do.....	.....	71 42	
A. Rose.....	do.....	.....	65 86	

Statement of persons employed in the public printing, &c.—Continued.

Names.	Pay for—	Time employed.	Aggregate amount.	Remarks.
M. Van Tyne	Piece work.	.....	\$44 97	
J. McEvoy	do.....	.....	111 81	
J. Hunt	do.....	.....	142 76	
M. Keefe	do.....	.....	59 71	
M. Middleton.....	do.....	.....	160 86	
A. Mulhare	do.....	.....	142 50	
E. Clements.....	do.....	.....	120 71	
M. Acton	do.....	.....	164 93	
J. Dawson.....	do.....	.....	110 15	
L. Childress.....	do.....	.....	103 68	
S. Tyler.....	do.....	.....	75 30	
M. Purdy.....	do.....	.....	118 18	
M. Stone.....	do.....	.....	77 09	
S. Mahorney	do.....	.....	57 87	
M. Howard	do.....	.....	43 58	
E. Ennis	do.....	.....	60 90	
S. Lynch	do.....	.....	42 98	
L. Waters	do.....	.....	33 45	
M. Burch.....	do.....	.....	109 43	
M. Fox	do.....	.....	65 48	
C. Rorke	do.....	.....	40 45	
S. Thompson.....	do.....	.....	39 45	
S. McNeir	do.....	.....	38 22	
S. Crawford.....	do.....	.....	51 37	
S. Greenwell	do.....	.....	41 44	

A. R. Wilson.....	do.....	39 52
A. E. Sword.....	do.....	43 34
M. Fowler.....	do.....	12 45
J. Cavanaugh.....	do.....	38 19
M. Miles.....	do.....	35 10
A. French.....	do.....	39 66
V. Bryan.....	do.....	49 93
K. Dulin.....	do.....	120 14
G. Lowe.....	do.....	60 08
H. Bowen.....	do.....	57 28
A. Doolittle.....	do.....	10 05
A. Clarke.....	do.....	17 20
C. Kershaw.....	do.....	25 88
B. Crooks.....	do.....	39 90
A. Glover.....	do.....	32 85
F. C. Smead.....	do.....	5 40
A. Riley.....	do.....	4 80
V. Maus.....	do.....	26 87
A. Hill.....	do.....	7 14
E. Chauncey.....	do.....	79 22
T. Keefe.....	do.....	74 00
H. Mills.....	do.....	6 60
J. H. Keefer.....	do.....	53 95
C. Talbert.....	do.....	30 68
M. A. Crussell.....	do.....	39 54
M. A. Conner.....	do.....	55 40
E. Conway.....	do.....	80 49
Mary Tobin.....	do.....	20 00
		56,597 12

Persons employed in the public binding.

Names.	Pay per day.	Time employed.	Aggregate amount.	Remarks.
George P. Goff.....	.....	Days. hours		
S. T. Crawford.....	\$2 50	225 0	\$921 56	Salary \$1,500 per annum.
Thomas Childs	2 50	171 0	427 50	
Henry Chase.....	2 50	171 2½	431 12	Including \$3 for extra work.
Godfrey Rosewag.....	2 50	151 5	378 75	
Theodore Walmsley.....	2 50	153 5	383 75	
J. W. White.....	2 50	103 5	258 75	
G. H. Bodensick.....	2 50	153 2½	419 46	Including \$36 34 for extra work.
F. D. Chase	2 50	128 7½	358 47	Including \$36 60 for extra work.
Thomas Sparks.....	2 50	130 5	361 84	Including \$35 59 for extra work.
G. W. Brown	2 50	61 5	191 29	Including \$37 54 for extra work.
J. W. Glover.....	2 50	4 0	10 00	
W. L. Dowden.....	2 50	24 5	61 25	
J. S. Kane.....	2 50	67 5	168 75	
John Espey.....	2 50	39 0	97 50	
J. F. Behler	2 50	3 5	8 75	
William Hayes.....	2 33½	79 5	198 75	
J. J. Byrnes	2 33½	118 0	275 33	
J. F. Blakeney	2 33½	147 5	344 17	
F. A. Manning	2 33½	136 5	318 50	
J. F. Behler	2 33½	128 5	300 58	
M. B. Gordon	2 33½	52 0	121 33	Including 75 cents for extra work.
Henry Chase.....	2 33½	29 0	67 67	
A. H. Meryweather.....	2 33½	13 0	30 33	
G. H. Bodensick.....	2 33½	19 0	44 33	
	2 33½	2 0	4 67	

John Espey.....	2	33 $\frac{1}{3}$	25	7 $\frac{1}{2}$	60 08	Including \$2 50 for extra work.
C. F. Weser.....	2	33 $\frac{1}{3}$	22 0		51 33	
J. W. Houck.....	2	33 $\frac{1}{3}$	30 7 $\frac{1}{2}$		71 75	
J. P. D. Caton.....	1	16 $\frac{2}{3}$	141 2 $\frac{1}{2}$		164 79	
H. C. Espey.....	1	16 $\frac{2}{3}$	105 5		123 08	Including \$2 50 for extra work.
J. H. Bush.....		83 $\frac{1}{3}$	34 0		28 33	
D. S. Semple.....	1	33 $\frac{1}{3}$	141 5		188 67	
John Hill.....	1	33 $\frac{1}{3}$	43 0		59 83	
E. G. Piggott.....	1	00	184 5		184 50	Including \$12 37 for extra work. Including \$4 81 for extra work.
Jane McClelland.....	1	00	116 5		116 50	
Bettie Crooks.....	1	00	91 5		91 50	
Mary Wallace.....	1	00	57 0		57 00	
Caroline Crooks.....		58 $\frac{1}{3}$	187 5		121 74	Including \$12 68 for extra work. Including \$13 06 for extra work. Including \$8 37 for extra work.
Mary Weaver.....		58 $\frac{1}{3}$	32 0		23 48	
M. E. Hickey.....		58 $\frac{1}{3}$	4 0		2 33	
John Hudlow.....		50	144 5		84 93	
E. F. Eckloff.....		50	144 5		85 31	Including \$12 68 for extra work. Including \$13 06 for extra work. Including \$8 37 for extra work.
G. W. Mulloy.....		50	85 0		50 87	
T. J. Mulloy.....	1	71 $\frac{3}{7}$	50 0		85 71	
Richard Kelly.....	1	71 $\frac{3}{7}$	31 0		53 14	
J. D. Burt.....	1	71 $\frac{3}{7}$	11 0		18 86	
Total.....					\$7, 908 13	

DESTRUCTION OF PRINTED DOCUMENTS BY FIRE.

Since the preparation of the statistical portion of this report, the building occupied by the public binders was destroyed by fire, with nearly the whole edition of the second volume of the Mechanical Patent Office Report for 1860, nearly six hundred copies of the first volume, and a small number of other works of no considerable value.

The orders of the Senate and House of Representatives for the printing of these reports having been executed, and the printed volumes having passed into the hands of the binders, and beyond the custody and control of this office, I have thought proper to submit to Congress the question of reprinting them. It appears that, of the first volume of the Patent Office Report, five hundred and sixty-six copies were destroyed; twenty-three of which belonged to the Senate, and five hundred and forty-three to the House of Representatives. Of the second volume, (the plates,) fifty-three thousand nine hundred and thirty-nine were destroyed; fourteen thousand five hundred and fifteen belonging to the Senate, and thirty-nine thousand four hundred and twenty-four to the House. The plates from which the second volume was printed belong to the government, and if it is deemed proper by Congress to reprint a sufficient number of copies to complete the edition of the report, the order to do so can be executed in this office at a cost of about sixteen thousand dollars.

It may be proper to state that I have made no investigation into the origin of the fire, or of the safety or suitability of the building in which the public binding was executed, though I learn that it had been used as a bindery for several years. The contractors were selected by the Committees on Printing of the two houses of Congress, respectively; and the only duty required of the Superintendent, in connexion with the binding, is to see that the work is done in the manner stated in the contracts, and to receive it from the binders when executed.

JNO. D. DEFREES, *Superintendent.*

MEMORIAL
OF
F. F. LOW, OF CALIFORNIA,

CLAIMING

A seat in the House of Representatives from the State of California.

DECEMBER 12, 1861.—Referred to the Committee of Elections, and ordered to be printed.

The undersigned respectfully presents to the House the considerations upon which his claim to a seat as a member from the State of California is based.

At the general election held in the State of California on the first Wednesday in September last, each of the political parties in that State, believing the State was entitled to three members of Congress, nominated three members, and the undersigned was elected upon the republican ticket as one of the members to which the State was entitled, the election being as usual in that State by general ticket, and he receiving the third highest vote cast for congressman in the State. A question having been raised, however, as to the number of representatives to which the State was entitled, whether the old or new apportionment was in force for the Congress succeeding the election, the governor of the State issued his certificate in the form heretofore submitted to the House.

By the act of Congress passed July 30, 1852, it was provided that California should have two members of Congress until a new apportionment, on account of the incomplete returns of its population. Under that act the State has heretofore elected but two members. Until the passage of the act of Congress of May 23, 1850, (Statutes at Large, vol. 9, page 428,) the taking of each census was regulated by a special act. A reference to each one of these acts may be found in volume 1, page 101, Statutes at Large.

The act of May 23, 1850, was a general act to provide for the taking of the seventh and every other subsequent census, and for the apportionment of members of Congress upon each census.

That act makes it the duty of the marshals to make their returns to the Secretary of the Interior on or before the *first day of November*, 1850, and each tenth year thereafter, (section 1.) and makes it the duty of the Secretary, *immediately* upon receiving the returns, to

make the calculation prescribed by the act, and the apportionment of members of Congress, and to certify the apportionment to the House of Representatives and to the governor of each State.—(Sections 25 and 26.)

The census of 1860 was taken under this act, and the new apportionment took effect on the 1st November, 1860. The basis of representation being fixed on that day, the right of representation upon that basis came into existence, and it was a right of which the several States could not be deprived by any neglect of the Secretary of the Interior, if there was such neglect, to perform his duty. The right depended upon the fact, not upon the certificate of the Secretary.

Attention is called to the difference in the wording of section 25 in the requirement for the Secretary of the Interior to make out and transmit to Congress and the governors of the States the results of the apportionment. He is required to "*as soon as practicable* make out and transmit to the House of Representatives" such result, but he is required "*to make out and transmit without delay* to the executive of each State a certificate," &c.

The plain meaning of these provisions is, that if Congress be not in session, or from other cause it is impracticable to transmit to it the result of his labors, he shall do so as soon as that body convenes, or other obstacle is removed. But he shall transmit without delay such action to the State executives, that the interval of four months between the reception of the returns and the commencement of the new Congress may be employed by the people of the States in selecting their representatives. Upon any other principle how can the requirement that no delay take place be explained? If the new apportionment is not to take effect under two or three years, why such haste? The advantage of a Congress fresh from the people is secured by the construction for which I contend; a motive sufficiently powerful to justify the belief that Congress designed this the plain intendment of their act.

The apportionment founded upon the census of 1850 only became effective in 1853, but that was by force of the special provision, (section 24,) which applied only to that census. Thereafter no other time being prescribed, necessarily the new apportionment dates from the 1st of November, 1860. By the special provision, in the nature of an exception, in reference to 1853, the pregnant inference is carried that the exception was necessary to prevent the immediate operation of the act in that instance, and of course in every future instance.

It is true that many members are already elected under the old apportionment; but that is no valid argument against the rights of California. The argument that it is *inconvenient to do right* will not be urged to deprive a legally elected member of his seat upon the floor of the House.

There is no conflicting precedent or practice to embarrass this case, for it now comes up for the first time under the new law. Former legislation furnishes no light upon the matter. The case is *sui generis*, and must be determined upon its own merits.

I do not deem it necessary to remind the House that the apportion-

ment of direct taxes for California has been made upon the basis of her having a population entitling her to three members upon this floor, or that our privileges of representation should be equal to the demands of taxation.

One fact growing out of the practice of many of the States, including California, may be cited as of some weight in interpreting the intention of Congress in the act of 1851. In many of the States members of Congress have not been elected heretofore until the fall preceding the December when the first session of a Congress is held. Thus California elected this year in September. This practice was very common in many of the southern States. Supposing the Secretary of the Interior to transmit to the executives of the States in November the information required under the act in question, there would nearly a year elapse before these elections of members, and over a year before the meeting of the Congress designed to be affected by the new apportionment. The late extra session called the attention of the country to the necessity of an earlier election of members of Congress, but as the state of facts exciting that attention did not exist at the time the act was passed, but a very different practice, it is fair to presume that Congress acted upon the obvious considerations then presented, and hence designed to affect the Congress succeeding the date of apportionment.

F. F. LOW.

BRANCH MINT IN COLORADO TERRITORY.

MEMORIAL

OF THE

LEGISLATURE OF COLORADO TERRITORY,

RELATIVE

To the establishment of a branch mint in that Territory.

DECEMBER 16, 1861.—Referred to the Committee of Ways and Means, and ordered to be printed.

EXECUTIVE DEPARTMENT,
Colorado Territory, Secretary's Office,
Denver, December 2, 1861.

SIR: I have the honor to enclose herewith a certified copy of joint memorial of the legislative assembly of this Territory, lately convened at this city, and which I have been instructed to forward to you.

I have the honor to be, with great respect, your obedient servant,

LEWIS LEDYARD WELD,
Secretary of Colorado Territory.

Hon. GALUSHA A. GROW,
Speaker of the House of Representatives, Washington, D. C.

JOINT MEMORIAL.

To the honorable the Senate and House of Representatives of the United States in Congress assembled:

Your memorialists, the legislative assembly of the Territory of Colorado, would respectfully represent that the establishment of a branch of the United States mint at Denver, or some other point in this Territory, would greatly promote the interests of the people here, as well as in the country generally. According to report of the United States mint, the amount of gold coined from this Territory in

the year 1859 was \$622,000, and for the year 1860, \$2,091,000 ; besides, as is well known, large amounts have been used for mechanical purposes, and in circulation in its native state. We would further represent that the amount is increasing, and new discoveries are being made, and it is evident that the whole range of the Rocky mountains is more or less impregnated with the precious metal, and this Territory enjoys a central position from north to south along said range. In evidence of these facts, and others not necessary to mention, and in view of the risk, delay, and inconvenience of shipping gold such a great distance for coinage, we, your memorialists, beg leave to urge the object of this memorial, and in duty bound will ever pray, &c.

Resolved, That copies of this memorial be forwarded to the Speaker of the House of Representatives and President of the Senate and our delegate to the Congress of the United States, at Washington, D. C.

CHARLES F. HOLLY,

Speaker of the House of Representatives.

EDWARD A. ARNOLD,

President of the Council.

Approved November 4, 1861.

WILLIAM GILPIN,

Governor of Colorado Territory.

TERRITORY OF COLORADO, *Executive Department, Denver City, ss :*

I, Lewis Ledyard Weld, secretary of Colorado Territory, do hereby certify that the within and foregoing is a true and correct copy of a memorial passed by the last legislative assembly of Colorado Territory, approved and signed by the governor on the 4th day of November, A. D. 1861, and now on file in my office.

In testimony whereof, I have hereunto set my hand and the [L. s.] seal of Colorado Territory, this 2d day of December, A. D. 1861.

LEWIS LEDYARD WELD,

Secretary of Colorado Territory.

CHARLES HENRY FOSTER.

RESOLUTION

SUBMITTED BY

THE COMMITTEE ON ELECTIONS,

DECLARING

That Charles Henry Foster is not entitled to a seat as a representative of either the first or second congressional district in the State of North Carolina.

DECEMBER 18, 1861.—Agreed to and ordered to be printed.

Resolved, That Charles Henry Foster is not entitled to a seat in this House as a representative in the thirty-seventh Congress, either from the first or from the second district of North Carolina.

SOLICITOR OF CUSTOMS FOR THE COLLECTION DISTRICT
OF NEW YORK.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

RELATIVE

*To the appointment of a solicitor of customs for the collection district of
New York, and to expedite revenue actions in said district.*

DECEMBER 18, 1861.—Referred to the Committee on Commerce, and ordered to be printed.

TREASURY DEPARTMENT,

December 16, 1861.

SIR : In compliance with your request of the 13th instant, I have the honor to transmit herewith a draft of a bill to expedite the final disposition of revenue actions in the collection district of New York by the appointment of a solicitor of the customs therein, and for other purposes.

At the port of New York, where so large a proportion of the revenue from customs is collected, questions are daily presented arising under those laws of vital importance to the public treasury and to the interests of the commercial community, which require, for their prompt and satisfactory solution, a high order of legal ability and a thorough acquaintance with the provisions of our complex and multifarious code of laws, treasury instructions, and judicial decisions regulating our foreign and coasting trade, and the collection of duties from imports.

These questions give rise to numerous suits, which ought to be determined with as little delay as is consistent with an intelligent and faithful investigation, bringing into doubt, as they do, the legal rates of duty to be exacted on imports, and the right of the United States to large amounts of revenue already collected and passed into the treasury for the general purposes of the government.

So numerous and pressing are the duties devolving on the collector

of the customs and his subordinates it is hardly to be expected that, oppressed with the details of the current business, they will be able to bestow on these cases the consideration they deserve; and when they come into litigation, as many of them do, the district attorney finds himself unable, with a due regard to the other important duties, and with all the aid placed by the law at his disposal, to bring them to a determination with a promptness at all commensurate with the magnitude of the interests involved.

There are now on the docket of the court, undisposed of, suits against former collectors at New York of several years' standing, involving, it is believed, principles of great importance in their application to the business daily transacted at the custom-house and at the treasury department.

To supply this manifest deficiency in the present mode of executing the revenue laws, it is recommended that there be appointed at the port of New York an officer of suitable legal acquirements and familiar with the revenue laws and regulations, whose duty it shall be to aid the collector of the customs, when required, with his counsel on legal questions arising at that port under the various laws regulating commerce, navigation, and the collection of duties, and who shall conduct in the courts the prosecutions and suits arising under those laws as well in the behalf of the United States as in defence of the collector in suits brought against him for acts done in his official capacity, all which is provided for in the bill herewith submitted.

And in further confirmation of these views, which are submitted in compliance with the request contained in your letter of the 13th instant, I call the attention of the Committee on Commerce to the enclosed memorandum sent me by the collector of New York in regard to this proposed bureau.

I have further to state that the bill herewith submitted has a provision of law increasing the power of the Secretary of the Treasury for the mitigation or remission of fines, penalties, and forfeitures incurred by the infractions of the revenue law, now limited by act of 14th July, 1832, to the sum of fifty dollars; and in all cases which exceed this sum it is necessary that the case should undergo a judicial investigation before a remission or mitigation can be granted. The expense of this procedure in some of the judicial districts is so great as to forbid the exercise of the remitting power in many cases entitled to the clemency of the government, the costs exceeding the amount of the fine or forfeiture incurred.

The Secretary of the Treasury has been authorized in some cases to grant remission or mitigation of fines and forfeitures, on ascertainment of the facts, in such mode as he may prescribe. The general law was modified to that effect in regard to the forfeitures incurred under the recent act of July 13, 1861, entitled "An act further to provide for the collection of duties on imports, and for other purposes."

It is recommended and provided for in the draft of the bill herewith submitted that authority be given by law to the Secretary of the Treasury to grant remission or mitigation in the cases specified

in the act of March 3, 1797, not involving an amount exceeding one thousand dollars, on ascertainment of the facts by such rules and modes of proceeding as he may deem convenient and proper, and on his being satisfied that the fine, penalty, forfeiture, or disability, was incurred without wilful negligence or any intention of fraud.

The paper accompanying your letter of the 13th is herewith returned.

The provision made in the fifth section of the proposed bill for the distribution of fines, penalties, and forfeitures, in certain cases, supplies a deficiency in existing laws.

With great respect,

S. P. CHASE,
Secretary of the Treasury.

Hon. E. B. WASHBURN,
*Chairman of the Committee on Commerce,
House of Representatives.*

Memorandum in regard to a new bureau in the collection district of New York, the head to be called (say) the solicitor of the customs.

The business in this district arising out of the enforcement of the revenue laws should, so far as possible, be managed from its commencement to its termination by officers of the customs.

This is now done in regard to everything except *legal proceedings*, and there seems to be no good reason why these should be an exception to the general rule.

Three classes of suits arise out of the enforcement of the revenue laws in this district, viz:

Suits in *rem* and *personam*, suits against the collector, and suits arising under the recent confiscation acts.

As to the first class: as all the preliminary steps towards this class are taken by revenue officers, and as they must furnish all the proof for prosecuting them, and as the collector has the custody of the property in dispute while they are pending, it seems to be proper that an officer of the customs, acting under the direction of the Treasury Department, should have the general control of the suits, determining when and how they shall be brought, tried, argued, and appealed; and, if at all, on what terms they shall be settled or discontinued.

Such an officer, acting under the advice of the collector, and always at hand to confer with all the officers of the customs, and with every facility for sifting the questions at issue to the bottom, must (if he be competent to the duties) be far better able to prosecute and control these suits than the district attorney, who is remote from the sources of information, and is burdened and perplexed with important and multiform duties of another character.

What is stated above, in regard to suits in *rem* and *personam*, is equally true in respect to suits against collectors in their official ca-

capacity; and the same may be said concerning the novel suits commenced under the recent confiscation acts.

Among other reasons the following may be given for preferring the plan now proposed to the system now in practice:

1. *Convenience*.—It would be far more convenient to all parties (and especially the collector and other revenue officers) to have these legal proceedings subject to the management of the proposed bureau than to the control of the district attorney. It would be much more convenient to *him* also.

2. *Caution and certainty*.—Such a bureau would be more likely to sift cases to the bottom before directing suits to be commenced; and would be more apt to thoroughly prepare them for trial or argument than can be done under the present system.

3. *Promptness and celerity*.—An officer specially charged with this class of duties could and would urge these suits to final judgment more promptly than can possibly be done under the existing system.

Here are a few statistics on this subject, carefully obtained:

About 120 suits in *rem* and *personam*, arising in this collection district, are now pending in the courts. Some of them have been pending six years.

They involve property to the amount of from \$500,000 to \$750,000.

The property involved is now lying in store, or has been bonded. Some of the property is deteriorating in value and some wholly lost. Some of the sureties in these bonds have failed. The interest of the government in these suits is one-half at least of the above sum.

About 480 suits are pending against collectors, involving from \$500,000 to \$750,000, some of which were brought ten and eleven years ago.

There are some 50 suits pending, involving a large amount, which arose under the recent confiscation acts.

It is believed that if the plan proposed is adopted, such an accumulation of business, arising out of the enforcement of the revenue laws in this district, would not be found in our courts.

The importance to all parties of a prompt disposal of these classes of suits need not be pressed.

4. *Expense to the government*.—It is certain that the creation of such a bureau would, in the mere matter of costs and fees of courts and counsel, save much money to the government—far more than the entire expense of the bureau. This bureau would relieve the district attorney's office of much labor, giving him much more time than he now can have to attend to the other important and onerous duties of his office. It would also relieve the government of the necessity of employing expensive counsel in revenue cases. Of course, such counsel could be still employed in extraordinary cases.

Indeed, the law creating the bureau might provide that, by detailing to it some of the existing force of the custom-house, and diminishing the number or salaries of those who do little or nothing, (if there are such,) the expense of the bureau might be defrayed without increasing the aggregate cost of collecting the revenue.

The bureau might also be charged with all questions of a legal

nature submitted to it by the collector, together with all other matters which the collector might deem expedient.

NOVEMBER 4, 1861.

TREASURY DEPARTMENT,
Solicitor's Office, December 17, 1861.

SIR: I have examined the bill referred to me to-day, entitled "A bill to expedite the final disposition of revenue actions in the collection district of the city of New York, and for other purposes," and have the honor to say that, in my judgment, it is well calculated to secure the ends proposed to be attained by it.

I have the honor to be, with high respect,

EDWARD JORDAN,
Solicitor.

Hon. S. P. CHASE,
Secretary of the Treasury.

A BILL to expedite the final disposition of revenue actions in the collection district of the city of New York, and for other purposes.

Be it enacted by the Senate and House of Representatives in Congress assembled, That there shall be appointed at the port of New York, in the same manner in which deputy collectors are appointed, an officer to be called the solicitor of the customs, who shall commence and prosecute, on the part of the United States, all civil actions, suits, and proceedings in which the United States shall be concerned, arising out of the lawful and proper collection of the revenue and the enforcement of the revenue laws in the district of the city of New York, and shall defend all civil actions, suits, and proceedings arising as aforesaid in said district, in which the United States shall be concerned; and when so directed by the Secretary or Solicitor of the Treasury shall defend all such actions, suits, and proceedings against the collector of said district, or any other of the revenue officers thereof. All duties now required by law to be performed by the attorney for the United States for the southern district of New York in regard to the aforesaid actions, suits, and proceedings, and all powers conferred upon him by law in relation thereto, shall be performed by, and are hereby conferred upon, said solicitor of the customs, and all laws relating to said attorney, his rights, powers, and duties in regard to the aforesaid actions, suits, and proceedings, shall apply to said solicitor. The said solicitor shall perform all other duties arising in manner aforesaid, which may be assigned to him by the collector of said district. Said solicitor shall be of the degree of counsellor-at-law, and, before entering upon the duties of his office, shall take an oath such as is required of the other officers of the customs, and he shall receive for his services at the rate of five thousand

dollars annually, to be paid in the same manner in which the salaries of other officers of the customs in said district are paid.

SEC. 2. *And be it further enacted*, That all acts and parts of acts defining or regulating the relations between the Solicitor of the Treasury and United States district attorneys shall, in regard to the aforesaid actions, suits, and proceedings, apply to the relations between the Solicitor of the Treasury and said solicitor of the customs in the same manner as to those between the Solicitor of the Treasury and the district attorney for the southern district of New York.

SEC. 3. *And be it further enacted*, That there shall be appointed at the port of New York, in manner aforesaid, an assistant to the said solicitor of the customs, who shall, under his direction, aid him in the discharge of his aforesaid duties. He shall be of the degree of counsellor-at-law, and, before entering upon the discharge of the duties of his office, shall take an oath such as is required of said solicitor, and shall receive for his services at the rate of two thousand five hundred dollars per annum, to be paid in manner aforesaid.

SEC. 4. *And be it further enacted*, That the collector aforesaid shall detail out of the force now employed in his office so many clerks and other persons as may be necessary to enable said solicitor of the customs to discharge the duties of his office with due promptness; and said collector shall take such measures, under the direction and with the concurrence of the Secretary of the Treasury, as will prevent the aggregate sum expended in the collection of the revenue in his district being increased in consequence of the passage of this act.

SEC. 5. *And be it further enacted*, That the proceeds of all forfeitures, fines, and penalties incurred under the act of July 13, 1861, entitled "An act further to provide for the collection of duties on imports, and for other purposes," shall, after deducting all proper costs and charges, be distributed in the same manner as is provided in regard to the division of the proceeds of forfeitures, fines, and penalties under the act of March 2, 1799, entitled "An act to regulate the collection of duties on imports and tonnage."

SEC. 6. *And be it further enacted*, That in all cases of fines, forfeitures, and penalties incurred under the revenue laws, when the amount involved does not exceed one thousand dollars, the Secretary of the Treasury may prescribe such mode as he shall deem convenient and just for promptly ascertaining the facts in issue on the application, or with the consent of the parties incurring the same, and for the final disposition on the like application or by the like consent by settlement, remitter, or otherwise, of the matters and things in controversy.

SEC. 7. *And be it further enacted*, That all acts and parts of acts inconsistent with this act are hereby repealed.

FAMILY IN IRELAND

Resolved, That the Committee on the subject of the family in Ireland be instructed to report thereon at the next session of the House.

Resolved, That the Committee on the subject of the family in Ireland be instructed to report thereon at the next session of the House.

RESOLUTIONS

Resolved, That the Committee on the subject of the family in Ireland be instructed to report thereon at the next session of the House.

Resolved, That the Committee on the subject of the family in Ireland be instructed to report thereon at the next session of the House.

RICHARD A. BUCKNER,

Speaker of the House of Representatives.

JOHN P. VICK,

Speaker of the Senate.

Approved December 4, 1861.

R. MAGOFFIN.

By the Governor:

NAT. CAITHERN, Jr.,

Secretary of State.

EXECUTIVE DEPARTMENT.

Frankfort, Ky., December 6, 1861.

At the request of the General Assembly, I herewith transmit to you the enclosed resolutions.

Respectfully,

R. MAGOFFIN.

Wm. C. A. WYLLIE,

Washington, D. C.

FAMINE IN IRELAND.

DECEMBER 20, 1861.—Adopted. Referred to the Committee on Foreign Affairs, and ordered to be printed.

Mr. WICKLIFFE presented resolutions of the State of Kentucky in relation to famine in Ireland.

RESOLUTIONS in regard to Ireland.

Resolved by the general assembly of the Commonwealth of Kentucky, That in view of the want and famine impending over Ireland, and of our sense of humanity and of gratitude to her brave sons, who by thousands are perilling their lives on the battle fields of liberty, in defence of our government in this time of its trial, that our senators in Congress be instructed, and our representatives requested, to use all constitutional means in their power for the immediate relief of that distressed land by appropriate action.

Resolved, That the governor forward a copy of this resolution to our senators and representatives, with all convenient despatch.

RICH'D A. BUCKNER,

Speaker of the House of Representatives.

JOHN F. FISK,

Speaker of the Senate.

Approved December 4, 1861.

B. MAGOFFIN.

By the governor:

NAT. GAITHER, JR.,

Secretary of State.

EXECUTIVE DEPARTMENT,

Frankfort, Ky., December 6, 1861.

DEAR SIR: At the request of the general assembly, I herewith transmit to you the enclosed resolutions.

Respectfully,

B. MAGOFFIN.

Hon. C. A. WICKLIFFE,

Washington, D. C.

FAMINE IN IRELAND.

Passed in the Committee on Foreign Affairs, and ordered to be printed.

Mr. Wright presented resolutions of the State of Kentucky in relation to famine in Ireland.

RESOLUTIONS in regard to Ireland.

Resolved by the general assembly of the Commonwealth of Kentucky, That in view of the want and famine impending over Ireland, and of our sense of humanity and of gratitude to her brave sons, who by thousands are perishing their lives on the battle fields of liberty, in defence of our government in this time of trial, that our senators in Congress be instructed, and our representatives requested, to use all constitutional means in their power for the immediate relief of that distressed land by appropriate action.

Resolved, That the governor forward a copy of this resolution to our senators and representatives, with all convenient despatch.

JOHN P. FISK,
Speaker of the House of Representatives.
Speaker of the Senate.

Approved December 4, 1861.

B. MAGOFFIN,
NAT. GATHER, JR.,
Secretary of State.

EXECUTIVE DEPARTMENT,
Washington, D.C., December 6, 1861.
Dear Sir: At the request of the general assembly, I herewith transmit to you the enclosed resolutions.

Respectfully,
B. MAGOFFIN.

Hon. G. A. WRIGHT,
Washington, D.C.

INCREASE OF SALARIES IN COLORADO TERRITORY.

JOINT RESOLUTION AND MEMORIAL

OF THE

LEGISLATURE OF COLORADO TERRITORY,

PRAYING FOR

An increase of allowance per diem of the members and officers of the legislative assembly and an increase of salary of the territorial judges.

DECEMBER 23, 1861.—Referred to the Committee on Territories, and ordered to be printed.

JOINT RESOLUTION AND MEMORIAL.

To the Senate and House of Representatives of the United States in Congress assembled :

Your memorialists, the council and house of representatives of Colorado Territory, most respectfully represent, that whereas the organic act of this Territory, drawn up on the basis of the other Territories of the United States, provides that the *pay per diem* of members of the first and subsequent legislative assemblies should be three dollars during their attendance at the session thereof, and the officers of said legislative assemblies, together with all the territorial officers, are allowed a compensation in like proportion; and whereas, on account of the great distance from the manufacturing and producing sections, from whence the inhabitants of this Territory obtain nearly all their necessary articles of consumption, such as provisions, clothing, &c., the cost of such articles are nearly three times, and in some instances ten times, the cost of similar commodities in the more eastern parts of the United States government; and whereas it is therefore manifestly unjust that such a compensation should be laid at so low a rate: therefore your memorialists would respectfully ask your honorable body so to amend the organic act as to allow six dollars per diem for each member and officer in attendance on such first and subsequent legislative assembly, and an adequate addition to the salaries of the territorial judges, not exceeding twelve hundred dollars.

Be it resolved by the council and house of representatives of Colorado Territory, That our delegate to Congress be, and is hereby, requested to use all honorable means to bring this subject to the favorable consideration of Congress, and obtain a redress of grievances.

And be it further resolved, That the Secretary of the Territory be requested to transmit a copy of the foregoing resolution and memorial to our delegate to Congress.

CHARLES F. HOLLY.

Speaker of the House of Representatives.

EDWARD A. ARNOLD,

President of the Council.

Approved November 7, 1861.

WILLIAM GILPIN,

Governor of Colorado Territory.

TERRITORY OF COLORADO,
Executive Department, Danver City, } ss:

I, Lewis Ledyard Weld, secretary of Colorado Territory, do hereby certify that the within and foregoing is a true and correct copy of a memorial passed by the last legislative assembly of Colorado Territory, approved and signed by the governor November 7, A. D. 1861, and now on file in my office.

In testimony whereof, I have hereunto set my hand and the seal of
[L. S.] Colorado Territory, this 2d day of December, A. D. 1861.

LEWIS LEDYARD WELD,

Secretary of Colorado Territory.

BRANCH MINT IN COLORADO TERRITORY.

JOINT MEMORIAL

OF THE

LEGISLATURE OF COLORADO TERRITORY,

IN RELATION

To the establishment of a branch mint in that Territory.

DECEMBER 23, 1861.—Referred to the Committee of Ways and Means, and ordered to be printed.

JOINT MEMORIAL.

To the honorable the Senate and House of Representatives of the United States in Congress assembled:

Your memorialists, the legislative assembly of the Territory of Colorado, would respectfully represent that the establishment of a branch of the United States mint at Denver, or some other point in this Territory, would greatly promote the interests of the people here, as well as in the country generally. According to report of the United States mint, the amount of gold coined from this Territory in the year 1859 was \$622,000, and for the year 1860, \$2,091,000; besides, as is well known, large amounts have been used for mechanical purposes and in circulation in its native state. We would further represent that the amount is increasing, and new discoveries are being made, and it is evident that the whole range of the Rocky mountains is more or less impregnated with the precious metal, and this Territory enjoys a central position from north to south along said range. In evidence of these facts, and others not necessary to mention, and in view of the risk, delay, and inconvenience of shipping gold such a great distance for coinage, we, your memorialists, beg leave to urge the object of this memorial, and in duty bound will ever pray, &c.

Resolved, That copies of this memorial be forwarded to the Speaker of the House of Representatives and President of the Senate, and our delegate to the Congress of the United States at Washington, D. C.

CHAS. F. HOLLY,

Speaker of the House of Representatives.

EDWARD A. ARNOLD,

President of the Council.

Approved November 4, 1861.

WILLIAM GILPIN,

Governor of Colorado Territory.

TERRITORY OF COLORADO,
Executive Department, Denver City, } ss:

I, Lewis Ledyard Weld, secretary of Colorado Territory, do hereby certify that the within and foregoing is a true and correct copy of a memorial passed by the last legislative assembly of Colorado Territory, approved and signed by the governor on the 4th day of November, A. D. 1861, and now on file in my office.

In testimony whereof I have hereunto set my hand and the [SEAL.] seal of Colorado Territory this 2d day of December, A. D. 1861.

LEWIS LEDYARD WELD,

Secretary of Colorado Territory.

CHARLES H. UPTON.

PAPERS AND EVIDENCE

IN REGARD TO THE RIGHT OF

CHARLES H. UPTON

TO

*Hold his seat as a member of the House of Representatives from the
State of Virginia.*

JANUARY 2, 1862.—Ordered to be printed.

MEMORIAL OF S. FERGUSON BEACH, CONTESTING THE SEAT OF CHARLES H.
UPTON AS A REPRESENTATIVE FROM THE STATE OF VIRGINIA.

*To the honorable the House of Representatives of the Congress of the
United States:*

The memorial of S. Ferguson Beach, of the city of Alexandria, in the State of Virginia, respectfully represents: That in consequence of the revolutionary action of the convention of Virginia, which assembled at Richmond in February last, elections for members of the thirty-seventh Congress, on the day fixed by law for such elections, were obstructed and prevented throughout most of the congressional districts of the Commonwealth.

Such was especially the case in the seventh district, composed of Alexandria and adjacent counties, where, owing to the presence of large military forces, and to the operation of other influences scarcely less powerful, not a single poll is believed to have been opened.

By an ordinance of the convention of Virginia, lately sitting at Wheeling, passed on the 20th day of August, 1861, it was ordained that in all those districts where elections had thus been prevented, as aforesaid, elections should be held on the fourth Thursday of October then next; and it was also thereby provided, that voters who should be unable to vote at their usual places, by reason of the presence of those in armed opposition to the government, should be allowed to vote in any county of their district.

Under the provisions of this ordinance, and in response to the proclamation of Francis H. Pierpont, governor of the Commonwealth, calling upon the loyal citizens, wherever it was practicable, to avail themselves of said provisions, polls for the election of a representative for said seventh district were regularly opened in the city of Alexandria on the day appointed.

A small vote was cast, made up by voters from the counties of Alexandria, Fairfax, and Prince William, all, substantially, for your memorialist, as will appear by a regular and formal certificate of election which he now holds.

Your memorialist further represents, that upon the assembling of the present Congress, in extra session, on the 4th day of July, 1861, one Charles H. Upton, confessedly a citizen of, and voter in, the State of Ohio, at the presidential election in the November previous—neither then nor now a citizen of the State of Virginia—not even a *bona fide* inhabitant of Virginia, so far as can be ascertained, on the fourth Monday of May last appeared as the representative of said seventh district.

No one appeared to contest his right, since no person interested thereunto had any intimation whatever that any such right was pretended. On the contrary, it was matter of the most common notoriety that no election of a representative, either in form or substance, had been held in a single precinct of the district.

The urgent necessity for an immediate organization of the House precluded, at that time, any inquiry into minor matters, and the said Upton was accordingly admitted and sworn in as a member, without examination of his credentials.

The grounds upon which the said Upton claims to represent the loyal population of said district are entirely unknown to your memorialist and to all those who participated in the election lately held, on the fourth Thursday of October.

It is believed a slight examination will show that the claim rests upon no foundation whatever, and it is respectfully submitted that a decent regard for the rights and feelings of those interested requires that such examination shall be made.

On behalf, therefore, of them and of himself, your memorialist desires that the House, by its proper committee, will make due inquiry in the premises and dispose of the subject-matter in such way as the rights and interests of all concerned may appear to require.

S. FERGUSON BEACH.

ALEXANDRIA, *Virginia*, November 29, 1861.

ZANESVILLE, *Ohio*, June 27, 1861.

DEAR SIR: I have been informed that a Mr. Charles H. Upton, who was, until a few days past, one of the editors of the Zanesville Courier, designs to claim a seat in the House of Representatives, as member for the Fairfax, Virginia, district, upon the basis of an election pur-

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porting to be held a short time since, but which, I have reason to believe, could not and was not held.

Aside, however, from the foregoing, it is not believed here that Mr. Upton is eligible, for the reason that he is, and claims himself to be, a citizen of Ohio. I was one of the clerks of the annual and presidential elections held in the first ward of this city in 1860, and when Mr. Upton presented his vote at the annual election in October I challenged it upon the ground of non-residence; when, after examination, the matter was postponed for an hour or two. In the meantime the judges consulted with General Goddard, and upon the re-appearance of Mr. Upton overruled my challenge and permitted him to vote. At the presidential election he voted without challenge. If Mr. Upton is now eligible to the office he claims, he may cause some notice of his case to be taken by the grand jury of this county for a violation of the election laws of Ohio. You are without doubt posted in the laws, and can determine whether he can, under their provisions, rightfully become a member. All that I can say is, that I trust justice will be done.

I am very truly, &c.,

JOHN COOPER.

Hon. S. S. Cox.

HOUSE OF REPRESENTATIVES, *July 8, 1861.*

I received this letter from Mr. Cooper, whom I know to be a citizen of Zanesville and a judge of the election. All I can do is to have this and the paper sent me referred to the committee.

S. S. COX.

MAY 29, 1861.

Zanesville Courier, published daily and weekly by C. H. Upton and J. T. Shryock.

(Office one door east of the court-house.)

Daily (in advance)	\$6 00
Weekly	1 50

THIRTY-SEVENTH CONGRESS, SECOND SESSION.

CONGRESS OF THE UNITED STATES.

IN THE HOUSE OF REPRESENTATIVES,
December 9, 1861.

On motion of Mr. Dawes,

Resolved, That S. F. Beach, contesting the right of Hon. Charles H. Upton to a seat in this House as a representative from the seventh district of the State of Virginia, be, and he is hereby, required to serve upon the said Upton, within six days after the passage of this

resolution, a particular statement of the grounds of said contest; and that the said Upton be, and he is hereby, required to serve upon the said Beach his answer thereto in six days thereafter; and that both parties be allowed twenty days next after the service of said answer to take testimony in support of their several allegations and denials, before some person residing in said district or the District of Columbia, authorized by the laws of Virginia or of the United States to take depositions, but in all other respects in the manner prescribed in the act of February 19, 1851.

Attest:

EM. ETHERIDGE, *Clerk.*

HOUSE OF REPRESENTATIVES, *December 11, 1861.*

S R: When I had a conversation with you yesterday I had not seen, as I informed you, your memorial.

I have since read it. It is neither decorous in language nor truthful in substance; but as you have seen fit to serve it upon me under the rule adopted by the Committee of Elections, I shall take occasion, at the proper time, to reply to and disprove its unfounded allegations.

Yours, &c.,

CHARLES H. UPTON.

S. F. BEACH, Esq., *Alexandria, Va.*

ALEXANDRIA, *Va., December 14, 1861.*

DEAR SIR: Your note of the 11th instant was duly received. I regret that you should find anything in the phraseology of my memorial which appears to you exceptionable. I need scarcely say that nothing of the kind was intended.

The answer which you propose to file can be forwarded to me by mail, and its receipt will be duly acknowledged.

Very respectfully yours,

S. FERGUSON BEACH.

Hon. C. H. UPTON.

HOUSE OF REPRESENTATIVES,
December 19, 1861.

SIR: With your memorial before me, claiming your right, and denying mine, to the seat I hold in the 37th Congress of the United States, I proceed to answer your several allegations in the order in which you present them.

That there was a condition of things in Virginia, as you set forth, in the month of May last, and at the regular period for holding congressional and other elections, which made any attempt to adhere to the national standard, and rally the loyal people of Virginia thereto,

both difficult and dangerous, is most true; but that there was no poll opened in the seventh district at that time is untrue; and in answer to your carefully-worded charge, that "not a single poll is believed to have been opened," I will, at the proper time, of which you will be duly notified, prove by the testimony of the conductor, and one or more of the commissioners for holding the election at Ball's Cross Roads, in Alexandria county, that a poll was then and there, on the 23d day of May, being the fourth Thursday of May, regularly opened for a member of Congress.

As to the proclamation of Governor Pierpont, to which you refer, I call upon you to lay it before the Committee of Elections, that they may see whether it gave the citizens of Alexandria any authority for the step they took, or whether it referred only to "vacant and unrepresented districts."

As to the election held in the city of Alexandria on the fourth Thursday of October last, I have only to say that I took no notice of it, nor those concerned in it. But if the newspapers of the day are to be relied on, and there were, as I believe, more than five hundred Union citizens then in Alexandria; and as less than one hundred and fifty votes are said to have been cast on that day, it leaves the gratifying inference to me that a large majority of the loyal citizens there regarded the movement to embarrass me as both ungenerous and illegal.

What you say about my former residence in Ohio is immaterial; but when you represent that "one Charles H. Upton was not even a *bona fide* inhabitant of Virginia, so far as can be ascertained, on the fourth Monday of May last," I am compelled to believe that you have not made very strenuous efforts to "ascertain" this very important fact. At any rate, I will produce testimony to remove all obscurity upon this point.

As what you have alleged touching the manner in which I was admitted as a member of the House reflects upon the House itself, I will leave this body to bear your censure with what equanimity they can.

Having already objected to the general tone and substance of your memorial, I will only add that, as the memorial has been published, I will take the liberty of publishing also your note of the 14th instant.

Yours, &c.,

CHA'S H. UPTON.

S. FERGUSON BEACH, Esq.,
Alexandria, Va.

ALEXANDRIA, Va., December 21, 1861.

DEAR SIR: Your answer to my statement of the grounds on which your claim to a seat in the 37th Congress is contested has been duly received, and service thereof is hereby acknowledged.

Very respectfully yours,

S. FERGUSON BEACH.

Hon. C. H. UPTON.

HOUSE OF REPRESENTATIVES,
December 30, 1861.

SIR: Take notice that, under the rule of the Committee of Elections, I shall summon Hon. A. Lawrence Foster, Dr. Simon Groot, Dan'l F. Dulay, and H. W. Throckmorton, esqs., of Fairfax county; Rich'd Southern, Noah Drummond, and C. B. Graham, esqs., of Alexandria county; and Lewis Mackenzie, C. B. Shirley, and J. H. Lathrop, esqs., Alexandria, Va., to appear at the mayor's office in this city on Friday next, the 3d of January, at 10 o'clock a. m., to answer touching the matters set forth in your memorial denying my right, and setting up your own, to a seat in the House of Representatives of the United States.

Yours, &c.,

CHA'S H. UPTON.

S. FERGUSON BEACH, Esq.,
Alexandria, Va.

ALEXANDRIA, Va., December 31, 1861.

DEAR SIR: Your favor of yesterday, notifying me of your intention to take the testimony of divers persons in the matter of your right to a seat in the 37th Congress, is received. The notice is shorter than I could have desired, and it is possible that one or two professional engagements, to which I am committed, may prevent my attendance.

I will endeavor, however, to be present. In any event the examination of the witnesses can be proceeded with. I shall take no exception because of the shortness of the notice, nor for any other formal defect.

Respectfully yours,

S. FERGUSON BEACH.

Hon. C. H. UPTON.

To the House of Representatives of the thirty-seventh Congress:

I herewith present a statement respecting my claim to a seat in the House of Representatives.

Early in November, 1860, I left Ohio, where I had been engaged in editing a daily paper, and returned to Virginia with the intention of remaining there. I have resided in Virginia for more than twenty-five years, and have never ceased, from the time of my first inhabitation there, to be the owner of land and a tax-payer to the Virginia treasury. I have never owned land nor dwelling elsewhere. When I left Ohio my partner in the newspaper business was authorized to dispose of my interest, either separately or conjointly with his own,

as might be most advantageous. For reasons entirely of a business nature my interest was not advertised for sale, nor was my name withdrawn from its head; but, on the contrary, I continued to write occasional letters for the paper from this city, where I was engaged for a time as clerk to the Committee on Naval Affairs. Some time in April last I received an appointment in the Patent Office, still, however, continuing to reside with my family in Fairfax county, Virginia. Immediately after the adjournment of the Richmond convention I went to Alexandria and called upon Hon. George W. Brent, who was a member of that body, (and elected by a very large majority as a Union candidate,) and requested him to announce himself as a candidate for Congress. He peremptorily refused. I then called upon Lewis McKenzie, esq., to take this position. He also declined. I then wrote a card announcing myself as a candidate, and again visited Alexandria with a view to its publication in the *Gazette*—a paper of large circulation in the seventh district, then published in that city. The editor of the *Gazette* promised to publish the announcement until the day of election, but failed to redeem his promise. Having waited for the fulfilment of the promise a reasonable time, I announced myself a candidate in two papers of this city—the *Republican* and *Star*—and also issued a circular addressed to the people, of which the following is a copy:

ADDRESS.

FALLS CHURCH, FAIRFAX COUNTY,
May 15, 1861.

On Friday last I visited Alexandria, and placed the subjoined announcement in the hands of the editor of the *Gazette*, who promised to publish the same if I would omit the portion contained in brackets. I consented to this change, but the promise has not been kept:

To the voters of the 7th congressional district:

I hereby offer myself as a candidate for election to represent you in the next (37th) Congress of the United States, upon the basis of the maintenance of the Union. [The recent convention at Richmond, called without authority, and usurping all authority, has undertaken to set aside the supreme law of the land in reference to elections to Congress.—Acts 1852-'53, ch. 3, § 7, p. 4.] As, therefore, in most of the precincts throughout the district no poll will be opened for members of Congress, I call upon Union men to open side polls, and preserve the evidence of the wishes of the people, a copy of which may be transmitted to me, at Falls Church, Fairfax county, or to Hon. John W. Forney, Clerk of the House of Representatives, at Washington.

CHARLES H. UPTON.

At Alexandria I witnessed the first fruits of the revolution now in progress ; the wharves were without shipping, many of the stores were closed, and the streets, excepting a few persons in regimentals, were almost deserted ; the silence of the ancient borough, where the immortal Washington once voted and worshipped, was almost oppressive, and it was with a sad heart that I looked upon all this. The leading spirits of this revolution talk about "Lincoln's government—the north invading the south—a mercenary army menacing Virginia;" but all this is the language of bitter partisans. The north has never yet invaded the south—the foot of no armed soldier of the Union has yet pressed the soil of Virginia, nor has the existing administration done aught but defend the flag and property of the nation, cut a path to its beleaguered capital, and blockade the ports which refused to pay duties at the custom-houses of the Union. This is what has been done, and this is the whole of it ; and for thus performing his sworn duty, the President of the United States has been accused of "invading the south," and Jeff. Davis, whose supporters have all the while led the way in aggression, now talks of "accepting" the war which is made ! The siege of Fort Sumter must be blotted from history before the world will "accept" this reversal of truth. Everybody knows where, and by whom, this political saturnalia was begun ; the glory and shame of it belongs to South Carolina, whose public men openly avow that they have long sought an opportunity to overthrow the government established by Washington and Jefferson, and their compeers. The question whether Virginia will join the alliance formed by the Gulf States, for this purpose, is still before the people. The Richmond convention did not dare to take it from them ; yet we are told that all are traitors who do not indorse the ordinance of "secession," as it is called, passed by that convention. How is this ? Did this convention, among their secret acts, abolish the Virginia Bill of Rights, the magna charta of Virginia liberty ? If not, here is the second clause of that glorious instrument : "*That all power is vested in, and consequently derived from, the people ; that magistrates are their trustees and servants, and at all times amenable to them.*" This convention, then, is still amenable to the people, and the sixty-odd thousand Union majority which marked its election may hold it to account. The people have still one opportunity left (God grant that it may not be the last) to redeem their heritage, and restore the imperilled Union. The effort to deprive the people of their deliberate vote by clamor and threats, to put down freedom of speech and the press, by denouncing the speedy infliction of the penalties of treason upon all who dare to question the wisdom and authority of the convention, if it succeeds, will make the election of Thursday next a mockery. Union men of Virginia ! break the silence you have kept too long ; come forth in your full strength, and show the world that Richmond is not all of Virginia, and, if you cannot out-vote the troops which are now quartered upon you and eating out your substance, at least show a moral strength in your numbers which will serve to make those who for a time hold your destinies in their hands, pause before they finally determine that

Virginia, now the geographical centre of this great nation, shall be handed over to the new-fangled confederacy, to become their outposts, their fence and shield from danger, that they may sow and reap in safety, while our crops are trampled down and wasted by armies and their camp-followers ; that their wives and children may sleep in security at their homes, while ours are scattered and flying from their dwellings.

My political creed, the same which Henry Clay believed, teaches me that my first obedience is due, not to Massachusetts, where I was born—not to Virginia, which holds all my earthly possessions, and where I have lived, with the exception of two brief intervals, for the last twenty-five years—neither to the State of my nativity nor to the State of my adoption, but to the UNITED STATES OF AMERICA ; and the government under which we live, instead of a blessing, will be a torment, a perplexity, and a curse to the citizen, until the pestilent heresy of State sovereignty is rooted out of the land. Look at the condition, fellow-citizens, in which we are likely to be placed after the troops have fied and drummed and bayoneted us out of the Union. If we adhere to the flag of our country, we commit treason against the Confederate States ; if we go over to the Confederate States, we commit treason against the United States ; and thus the two governments have each a halter ready for our necks. We might as well go hang ourselves at once, and save them both all further trouble about our miserable carcasses. For myself, I shall take on no new allegiance, train after no new banner. That I have lived under I will die under ; and in this connexion, I say, as Luther did at the Diet of Worms, “ God help me—I can do no otherwise.”

CHARLES H. UPTON.

The editor of the Alexandria Gazette thereafter attempted to whistle me down the wind with the following notice:

[From the Alexandria Gazette of May 17.]

Mr. Chas. H. Upton, of Fairfax county, has authorized an announcement that he is a candidate to represent the seventh congressional district in the next Congress of the United States, “upon the basis of the maintenance of the Union,” and asking the Union men to furnish him with the evidence of their wishes. As the convention of Virginia has, by ordinance, declared that no election for members of Congress shall be held in this State at the ensuing election—as that ordinance is the law of the State—as an attempt to resist or contravene the ordinance would be highly illegal and improper, we trust that no one will countenance this proceeding by taking a vote or holding a poll ; and we have no doubt that those who are not in favor of secession will themselves condemn most pointedly that which can only promise mischief, and bring trouble upon parties persisting in being concerned in it. However, it is probable that all will, upon reflection, see the good sense of dropping the whole matter at once.

The editor of a small paper published at Fairfax Court-House also put forth the following notice:

[From the Fairfax County News of May 17.]

ELECTION OF CONGRESSMEN.

The convention of Virginia, representing the sovereignty of the people of the Commonwealth, and therefore speaking with *supreme authority*, passed the following on the 24th ultimo :

“The election for members of Congress for this State to the House of Representatives of the Congress of the United States, required by law to be held on the fourth Thursday in May next, is hereby *suspended* and *prohibited* until otherwise ordained by this convention.”

The obedience of every citizen of the State is not only due to the above, as the sovereign act of the Commonwealth, but is enforced by the pains and penalties of the law against treason.

On the day of election many of the precincts were visited and overawed by armed rebel forces, and threats of violence were made against any who should dare to vote for a member of Congress. The following letter from ex-Senator Mason, studiously prepared for the occasion, was also read at several precincts, (and probably throughout the district,) and deterred many from voting:

[From the Alexandria Gazette of May 22.]

LETTER FROM SENATOR MASON.

To the editor of the “Winchester Virginian:”

The question has been frequently put to me, what position will Virginia occupy should the ordinance of secession be rejected by the people at the approaching election? And the frequency of the question may be an excuse for giving publicity to the answer.

The ordinance of secession withdrew the State of Virginia from the Union, with all the consequences resulting from the separation. It annulled the Constitution and the laws of the United State within the limits of this State, and absolved the citizens of Virginia from all obligation of obedience to them.

Hence it follows, if this ordinance be rejected by the people, the State of Virginia will remain in the Union, and the people of the State will remain bound by the Constitution of the United States, and obedience to the government and laws of the United States will be fully and rightfully enforced against them.

It follows, of course, that in the war now carried on by the government of the United States against the seceded States Virginia must immediately change sides, and under the orders of that government turn her arms against her southern sisters.

From this there can be no escape. As a member of the Union, all her resources of men and money will be at once at the command of the government of the Union.

Again: For mutual defence, immediately after the ordinance of secession passed, a treaty, or "military league," was formed by the convention, in the name of the people of Virginia, with the "Confederate States" of the south, by which the latter were bound to march to the aid of our State, against the invasion of the federal government. And we have now in Virginia, at Harper's Ferry and at Norfolk, in face of the common foe, several thousand of the gallant sons of South Carolina, of Alabama, of Louisiana, Georgia and Mississippi, who hastened to fulfil the covenant they made, and are ready and eager to lay down their lives, side by side with our sons, in defence of the soil of Virginia.

If the ordinance of secession is rejected, not only will this "military league" be annulled, but it will have been made a trap to inveigle our generous defenders into the hands of their enemies.

Virginia remaining in the Union, duty and loyalty to her obligations to the Union will require that those southern forces shall not be permitted to leave the State, but shall be delivered up to the government of the Union; and those who refuse to do so will be guilty of treason, and be justly dealt with as traitors.

Treason against the United States consists as well "in adhering to its enemies, and giving them aid," as in levying war.

If it be asked, what are those to do who in their consciences cannot vote to separate Virginia from the United States, the answer is simple and plain: honor and duty alike require that they should not vote on the question; and if they retain such opinions they must leave the State.

None can doubt or question the truth of what I have written, and none can vote against the ordinance of secession who do not thereby (whether ignorantly or otherwise) vote to place himself and his State in the position I have indicated.

J. M. MASON.

WINCHESTER, VA., *May* 16, 1861.

[From the National Intelligencer, May 20.]

FREEDOM OF OPINION.

The Alexandria correspondent of the Richmond Examiner has the following paragraph in one of his late letters:

"There is some talk here of an attempt to vote for a representative to the Congress of the United States from this district. While I am strongly opposed to lynch or mob law, I think a case might arise when it would be necessary to inflict some kind of a summary punishment, and an attempt of the kind alluded to would seem to be a case where the forms of law might be dispensed with."

Notwithstanding all these appliances, one precinct—that of Ball's Cross Roads, Alexandria county—was regularly opened, and despite the efforts of eighteen armed men to bully and overawe the voters,

ten votes were cast for me at this point, and one for George W. Brent. From other precincts irregular returns, under protest, were made, the evidence of which fact is before the committee.

Respectfully submitted.

CHAS. H. UPTON.

POLL-BOOKS OF THE ELECTION OF CHARLES H. UPTON.

BALL'S X ROADS, *Alexandria County, May 23, 1861.*

The undersigned legal voters and citizens of Virginia, some of whom were deterred by threats of violence from armed soldiers, and others led to believe that to vote for a member of Congress was illegal, do therefore give our votes for Charles H. Upton, of Fairfax county, as our representative in the 37th Congress of the United States.

R. H. Donaldson.
G. W. Reid.
Thomas Simmons.
Samuel Birch.
Robert Harrison.
Robert Marcy.
George Marcy.
John T. Birch.
Samuel Corsien.
G. Vandenberg.

Samuel Shreeve.
William Marcy.
William Shreeve.
Samuel Marcy.
Robert Hurst.
Lewis Marcey.
George R. Herrick.
James Marcy.
John Brown.

BRENTSVILLE, PRINCE WILLIAM COUNTY,
May 23, 1861.

We, the undersigned, citizens of Prince William county, claiming our right to a representative in Congress, do hereby cast our votes for Charles H. Upton, of Fairfax county, as our representative in the 37th Congress of the United States.

Wm. K. Stewart.
Hugh B. Draney.
C. H. Snow.
Jno. Depue.
Jacob Depue.
Abraham Depue.

William Kline.
Charles W. Vanscotin.
James G. Draney.
Samuel Drake.
R. C. Remy.
John M. Stewart.

ALEXANDRIA, VA.,
May 23, 1861.

No poll having been opened in any precinct of this city for the election of a member of the 37th Congress, the undersigned hereby vote for Charles H. Upton, esq., of Fairfax county, for this office,

claiming a right of representation, and Mr. Upton having announced himself as a Union candidate.

James T. Close.
John F. W. Whitemore.
John R. Dewey.
Samuel Mahoney.
Joshua Harrison.
Silas M. Wilkins.
John Hodgkin.
J. H. Van Buren.
Levin P. Walker.
A. H. Bradt.
Wm. Johnson.
Robert H. Wade.
Frederick Daw.
T. A. Stoutenburgh.
Edwin Henry.

H. S. Marting.
Orrin Babcock.
Thomas Emigh.
Jacob Bowers, his X mark.
S. L. C. Sidebottom.
John P. Whitemore.
C. D. Gemmel.
J. P. Whitemore.
John A. Flocker.
Charles C. Wade.
John Doran.
Jas. A. Stoutenburgh.
Walter L. Penn.
John Moore.

FALLS CHURCH, FAIRFAX COUNTY, VA.,

May 23, 1861.

Protesting against the act of the Richmond convention, in the attempt to shut us out of any representation in the next Congress of the United States, we do hereby cast our votes for Charles H. Upton, of this county, as our representative in the 37th Congress, and also protest against such act as illegal under the constitution and code of Virginia.

D. F. Dulany.
B. Clock.
W. H. Erwin.
G. W. Haycock.
Aaron Brott.
C. Jos. Kirbey.
Levi Parker.
Wells Hatch.
Reuben Ives.
John Cornwell.

Wm. Pain.
A. Bridle.
Albert Ives.
J. Galpin.
J. Barrett.
Reuben Kelly.
Chas. Hardin.
F. Mills.
James E. Murray.
A. B. Allen.

LEWENSVILLE PRECINCT, FAIRFAX COUNTY,

May 23, 1861.

Whereas the commissioners of election refused to open any poll for member of Congress at this precinct, we, legal voters and citizens of Virginia, protesting against such disfranchisement, do hereby cast

our votes for Charles H. Upton, of this county, as our representative in the 37th Congress of the United States.

Joseph Osmun.

Francis Crocker.

William A. Wilson.

Frank H. Janney.

Lewis P. Griffith.

Thomas H. Nelson.

J. Elliott.

L. Van Voast.

Oliver Hodges.

G. F. M. Walters.

John Gilbert.

J. D. Crocker.

B. D. Carpenter.

B. T. Carpenter.

Wm. Woodworth.

Poll for delegates to the house of delegates, and other officers, Thursday, May 23, 1861.

NAMES OF CANDIDATES AND OFFICES.

Names of voters.	STATE SENATE.		HOUSE OF DELEGATES.				MEMBERS OF CONGRESS.	
	Henry W. Thomas.	Louis McKenzie.	Wm. G. Cazenove.	Ed. Snowden, jr.	Louis McKenzie.	H. S. Wonder.	George W. Brent.	Chs. H. Upton.
T. B. Lawson.....	1	.....	.....	1	.....	.....	.....	.....
George Veitch.....	1	.....	1	.....	.....	.....	.....	.....
Wm. Burch.....	1	.....	1	.....	.....	.....	.....	.....
John Hicks.....	1	.....	.....	1	.....	.....	.....	.....
John W. Veitch.....	1	.....	1	.....	.....	.....	.....	.....
Jas. Roach.....	1	.....	1	.....	.....	.....	.....	.....
T. B. J. Fry.....	1	.....	1	.....	.....	.....	.....	.....
Ed. Leble.....	1	.....	1	.....	.....	.....	.....	.....
H. S. Wonder.....	1	.....	.....	1	.....	.....	.....	.....
Wesley Carlen.....	1	.....	.....	1	.....	.....	.....	.....
John R. Johnston.....	1	.....	1	.....	.....	.....	.....	.....
George R. Herrick.....	1	.....	.....	1	.....	.....	1	.....
George C. Jackson.....	1	.....	1	.....	.....	.....	.....	.....
S. L. Summers.....	1	.....	1	.....	.....	.....	.....	.....
Wm. J. Minor.....	1	.....	1	.....	.....	.....	.....	.....
George A. Thomas*.....	1	.....	1	.....	.....	.....	.....	.....
Jas. C. Roach.....	1	.....	1	.....	.....	.....	.....	.....
Wm. R. Burch.....	1	.....	.....	1	.....	.....	.....	.....
H. W. Febrey.....	1	.....	.....	1	.....	.....	.....	.....

*From Alexandria.

Poll for delegates and other officers, &c—Continued.

NAMES OF CANDIDATES AND OFFICES.

Names of voters.	STATE SENATE.		HOUSE OF DELEGATES.				MEMBERS OF CONGRESS.	
	Henry W. Thomas.	Louis McKenzie.	Wm. G. Cazevoove.	Ed. Snowden, jr.	Louis McKenzie.	H. S. Wonder.	George W. Brent.	Chs. H. Upton.
Richard Williams	1	.....	1	.....	.....	.....	.....	.....
Noah Drummond .....	.....	.....	.....	.....	1	.....	.....	.....
J. T. Ball	1	.....	1	.....	.....	.....	.....	.....
Wm. F. Carlin	1	.....	1	.....	.....	.....	.....	.....
J. A. Cisson .....	.....	1	.....	.....	.....	1	.....	1
Marcus Pearl .....	.....	1	.....	.....	.....	1	.....	1
Allen Pearce .....	.....	1	.....	.....	.....	1	.....	1
John W. Bowen	1	.....	1	.....	.....	.....	.....	.....
Thomas Hitchcock	1	.....	1	.....	.....	.....	.....	.....
Robert Donaldson .....	.....	1	.....	.....	.....	1	.....	1
John Burch, jr. ....	.....	1	.....	.....	.....	1	.....	1
Smith Minor	1	.....	1	.....	.....	.....	.....	.....
W. D. Nutt	1	.....	1	.....	.....	.....	.....	.....
T. J. Suddath	1	.....	1	.....	.....	.....	.....	.....
Wm. C. Veitch	1	.....	1	.....	.....	.....	.....	.....
C. E. French .....	.....	.....	.....	.....	.....	.....	.....	1
Thos. A. Tucker	1	.....	1	.....	.....	.....	.....	.....
R. S. Shreves	1	.....	.....	1	.....	.....	.....	.....
George O. Wunder	1	.....	.....	1	.....	.....	.....	1
Isaac A. Veitch	1	.....	1	.....	.....	.....	.....	.....
E. J. Oxley	1	.....	.....	1	.....	.....	.....	1
Harvey Bailey	1	.....	.....	1	.....	.....	.....	1
B. F. Crabb	1	.....	1	.....	.....	.....	.....	.....
E. S. Javens	1	.....	1	.....	.....	.....	.....	.....
James Reynolds	1	.....	1	.....	.....	.....	.....	.....
J. T. Clark	1	.....	1	.....	.....	.....	.....	.....
N. B. Clarvoe	1	.....	1	.....	.....	.....	.....	.....
Richard A. Veitch†	1	.....	1	.....	.....	.....	.....	.....
George W. Donaldson .....	.....	.....	.....	.....	.....	.....	.....	1
C. B. Graham	1	.....	1	.....	.....	.....	.....	.....
Wm. Shreves	1	.....	.....	1	.....	.....	.....	.....
O. P. Evens*	1	.....	1	.....	.....	.....	.....	.....

*In camp.

†From Alexandria.

COUNTY OF ALEXANDRIA, *to wit:*

This day personally appeared before me, a justice of the peace in and for said county, H. S. Wonder, Wesley Carline, H. W. Febry, Richard Southern, commissioners appointed to superintend an election to be held at Ball's Cross Roads, in said county, on the 23d day of May, 1861, for a State senator and member of the house of delegates, and made oath that they would faithfully execute the office of commissioners.

Given under my hand this 23d day of May, 1861.

JOHN R. JOHNSON, *J. P.*

COUNTY OF ALEXANDRIA, *to wit:*

This day personally appeared before me, a justice of the peace in and for said county, Noah Drummond, conductor appointed to conduct the election to be held at Ball's Cross Roads, in said county, on the 23d day of May, 1861, for a member of the house of delegates and a State senator, and made oath that in conducting the said election he would not attempt to influence the vote of any one, or be guilty of partiality for any candidate or person voted for, and as far as depends on him he would make a true return of the result of the election according to law.

Given under my hand this 23d day of May, 1861.

JOHN R. JOHNSON, *J. P.*

COUNTY OF ALEXANDRIA, *to wit:*

This day W. B. Lacy personally appeared before me, conductor of election at Ball's Cross Roads, in said county, and made oath that in the election about to be held at Ball's Cross Roads, in said county, he would record the votes for the candidates faithfully and impartially.

Given under my hand this 23d day of May, 1861.

NOAH DRUMMOND.

Conductor of Election at Ball's Cross Roads.

ALEXANDRIA COUNTY:

Having carefully examined the above and the within transcript, from the poll-book of the conductor of the election held at Ball's Cross Roads on the 23d day of May, ultimo, I hereby certify that the comparison shows the same to be a correct copy.

Given under my hand this 1st day of July, 1861.

H. S. WUNDER, *J. P.*

Evidence presented by Charles H. Upton.

OFFICE OF THE MAYOR OF WASHINGTON,
January 3, 1862.

Testimony taken before me this day, under a rule of the Committee of Elections of the House of Representatives of the United States, in the matter of S. Ferguson Beach, esq., and Hon. Chas. H. Upton.

Dr. S. J. GROOT, called.

Question. (By Mr. Upton.) Where do you reside, and of what State and county are you a citizen?

Answer. My present residence is Washington, but I am a citizen of Fairfax county, Virginia.

Question. How long have you lived in Fairfax county?

Answer. Between twelve and thirteen years.

Question. Were you formerly postmaster at Falls Church, and who had that office established?

Answer. I was, and you procured the establishment of the office.

Question. Have you read the memorial of S. Ferguson Beach?

Answer. I have.

Question. Is it true, as there set forth, that I was not a *bona fide* inhabitant of Virginia on the fourth Monday of May last?

Answer. It is not true.

Question. Was I not at my house, now known as Upton's Hill, for months preceding that day, and taking an active part in the angry political controversies there existing?

Answer. Yes.

S. J. GROOT.

J. H. LATHROP, esq., called.

Question. (By Mr. Upton.) Where is your residence?

Answer. Alexandria, Virginia.

Question. Have you read the proclamation of Governor Pierpont in the National Intelligencer of 18th October, ultimo?

Answer. I have.

Question. Is this (Exhibit A) the proclamation as you understand, under which Mr. Beach claims to have been elected to Congress?

Answer. It is.

J. H. LATHROP.

LEWIS MCKENZIE, esq., called.

Question. (By Mr. Upton.) Where is your residence and what your occupation, Mr. McKenzie?

Answer. I am a resident of Alexandria, Virginia, and mayor of that city?

Question. How long have you known me and where, as a resident?

Answer. Ten or fifteen years, and as a resident of Fairfax county, Virginia.

Question. Did I urge you some time early in May last, to let me announce you as a candidate for Congress?

Answer. You did, sir, in this city, and I declined.

LEWIS McKENZIE.

C. B. SHIRLEY, esq., called.

Question. (By Mr. Upton.) Where do you reside?

Answer. Alexandria, Virginia.

Question. Some time early last May did you ride with me to Alexandria?

Answer. I did.

Question. Did you point out to me the residence of George W. Brent, esq., and did you understand that I called upon him for the purpose of getting him to allow me to announce him as a candidate for Congress?

Answer. I did, and understood that was the purpose of your visit?

Question. Subsequently to this did you again ride with me to Alexandria, when I called upon Mr. Snowden, editor of the Gazette, to procure the publication of a card announcing myself as a candidate for Congress?

Answer. I did, and understood that to be the purpose of your visit.

Question. (By S. F. Beach.) What length of time transpired between these two rides with Mr. Upton?

Answer. A few days—within a week.

C. B. SHIRLEY.

H. W. THROCKMORTON, esq., called.

Question. (By Mr. Upton.) Where were you born, and where has been your residence?

Answer. I was born in Loudoun county, Virginia, and resided, until after the battle of Manassas, in Fairfax county, Virginia.

Question. How long, immediately before the election in May last, was I residing in Virginia?

Answer. Nearly seven months.

Question. What flag was flying over my house on the day of that election?

Answer. The stars and stripes, and had been for nearly a month.

Question. Were you residing with me at that time?

Answer. I was.

H. W. THROCKMORTON.

RICHARD SOUTHERN, esq., called.

Question. (By Mr. Upton.) Where is your residence?

Answer. Alexandria county, Virginia.

Question. How long have you known me as a resident of Virginia?

Answer. Twenty years.

Question. Is my residence near yours, and did I frequently pass your house, on my way to and from Washington, for some months prior to the election in May last?

Answer. Your residence is about a mile and a half from mine, and you frequently passed my house, for months before the election.

Question. Were you one of the commissioners for holding the election at Ball's X Roads on the 23d day of May last?

Answer. I was.

Question. Was the poll opened there for a member of Congress?

Answer. Not by the order of the governor of Virginia. There was a poll opened there for a member of Congress, by the conductor and four of the commissioners.

Question. Were there armed men present belonging to the army of Virginia, endeavoring to prevent the opening of the polls?

Answer. There were armed men, but they did not prevent the opening of the polls. There was one officer came into the room, and looked upon the poll-book, and saw your name upon the margin for member of Congress, and I heard him say that if he could get a sight of Upton "he be d——d if he should ever take a seat in Congress."

RICHARD SOUTHERN.

NOAH DRUMMOND, esq., called.

Question. (By Mr. Upton.) Where do you reside?

Answer. Alexandria county, Virginia.

Question. Were you the conductor of the election at Ball's + Roads in May last, and have you often acted in that capacity?

Answer. I was, and have acted as such for many years past.

Question. Did you open the polls on the 23d of May last for a member of Congress?

Answer. I opened the polls as regularly then as I always had before.

Question. Were there armed men present making any threats or disturbance?

Answer. In the afternoon armed men appeared and objected to my proceedings. I let them know that I was acting under oath, and felt bound to take the vote of every man who desired to vote, and they told me that I would have to abide the consequences hereafter.

Question. (By S. F. Beach.) What has been the average vote for several years past at Ball's X Roads?

Answer. From ninety to one hundred and forty-two. The latter was the heaviest vote I have known there.

Question. (By same.) Was there an election on the day mentioned for State senator and delegates?

Answer. There was.

Question. Was the usual and average vote cast for those candidates?

Answer. There were a little upward of a hundred votes cast. There were seventy-nine union votes and thirty-one secession votes.

Question. (By same.) Were the polls opened on that day on the question of ratifying the ordinance of secession?

Answer. Such polls were opened.

Question. (By Mr. Upton.) Who prepared the form of returns for your election.

Answer. It was sent to me from Alexandria, with the form written out.

Question. Why did you open the polls for a member of Congress on the fourth Thursday in May?

Answer. Because I understood that had always been the day, every other year, for such election.

NOAH DRUMMOND.

The foregoing witnesses appeared at my office in this city at the time herein named, and, having been duly sworn, gave their testimony and subscribed to the same in my presence in manner and form as set forth.

RICHARD WALLACH, *Mayor*.

JOHN KLINE *vs.* JOHN P. VERREE.

EVIDENCE AND OTHER PAPERS

IN THE MATTER OF THE CONTESTED ELECTION OF

KLINE *vs.* VERREE,

IN THE

Third congressional district of Pennsylvania.

JANUARY 6, 1862.—Referred to the Committee on Elections and ordered to be printed.

EXHIBIT A.

THIRTY-SEVENTH CONGRESS, SECOND SESSION.

CONGRESS OF THE UNITED STATES.

IN THE HOUSE OF REPRESENTATIVES,

December 3, 1861.

On motion of Mr. Stratton, the following was adopted:

Whereas, in the contested election case of John Kline, contestant, against the Hon. John P. Verree, sitting member from the third district of Pennsylvania, nearly the whole time allowed by law for taking testimony was consumed by the contestant, as appears by the record, by reason whereof the sitting member had not sufficient time to take such rebutting testimony as he desired to take, therefore,

Resolved, That twenty days from the date hereof be allowed to the sitting member to take such rebutting testimony as he may desire; that said testimony be taken before the recorder of the city of Philadelphia, and that the sitting member give ten days' notice to the contestant of the time and place of taking said testimony, and the names of the witnesses to be examined.

Attest:

EM. ETHERIDGE, *Clerk*.

EXHIBIT B.

In the matter of the contested election for the third congressional district of Pennsylvania for the House of Representatives of the United States, for the thirty-seventh Congress.

PHILADELPHIA, *December 7, 1861.*

SIR: You are hereby notified that in pursuance of a resolution of the House of Representatives of the United States, passed the 3d day of December, A. D. 1861, it is my intention to examine witnesses before the honorable Joseph Eneu, recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, second story, in the city of Philadelphia, on Tuesday the 17th day of December, A. D. 1861, at 12 o'clock m. of said day and each successive day thereafter, except Sundays, at the same time and place, till the testimony is taken and the witnesses examined.

The witnesses whom I intend to examine, and their places of residence, are as follows: James C. Baxter, residence No. 6 Cozzens place; John Hossart, residence 938 Rachel; Joseph J. Gillingham, residence 113 Laurel street; Alderman George H. Mecke, residence Third above Beaver; Alderman George W. Williams, residence 226 Callowhill; Theophilus T. Derringer, residence 105 Green street; Samuel M. Lane, residence 542 Brook street; Samuel S. McKinney, constable, residence unknown; Samuel Taylor, residence 611 North 4th street; of which please take notice.

Respectfully,

JOHN P. VERREE.

JOHN KLINE.

EXHIBIT C.

In the matter of the contested election for the third congressional district of Pennsylvania for the House of Representatives of the United States, for the thirty-seventh Congress.

DECEMBER 6, 1861.

SIR: You are hereby notified that in pursuance of a resolution of the House of Representatives of the United States, passed the third day of December, A. D. 1861, it is my intention to examine witnesses before the honorable Joseph Eneu, recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, second story, south side below Fifth street, in the city of Philadelphia, on Tuesday the 17th day of December, A. D. 1861, at 12 o'clock m. of said day and each successive day thereafter, except Sundays, at the same time and place, till the testimony is taken and the witnesses examined.

The witnesses whom I intend to examine and their places of residence are as follows: Thomas E. Little, residence 134 Green street; David Vickery, residence Austin place, 831 St. John; Benjamin Markley, residence 111 Dana street; William F. Beggs, residence 136 Green street; Jeremiah Robinson, residence now unknown, but was

an officer of election in the 4th division of the eleventh ward; Hyam Monheimer, residence now unknown, but was an election officer of the 3d division of the 16th ward, supposed residence 940 New Market; William H. White, residence 966 New Market; John H. Bringhurst, residence 1213 Shackamaxon.

Respectfully,

JOHN P. VERREE,
Per C. GILPIN.

JOHN KLINE.

[Mailed notice directed to John Kline, contestant. &c., House of Representatives, Washington, post paid, about 7 p.m. December 6, 1861.]

EXHIBIT D.

In matter of the contested election for the third congressional district of Pennsylvania for the House of Representatives of the United States, for the thirty-seventh Congress.

DECEMBER 9, 1861.

SIR: You are hereby notified that in pursuance of a resolution of the House of Representatives of the United States, passed the third day of December, A. D. 1861, it is my intention to examine witnesses before the honorable Joseph Eneu, recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, second story, in the city of Philadelphia, on Thursday the nineteenth day of December, A. D. 1861, at 12 o'clock m. of said day and each successive day thereafter, except Sundays, at the same time and place, till the testimony is taken and the witnesses examined.

The witnesses whom I intend to examine and their places of residence are as follows: Charles D. Knight, residence 720 Sansom street; Daniel M. Boyd, residence city of New York; Albert E. Eldridge, residence 2016 North 5th, above Norris; Thomas Haig, jr., residence Sixth, above Montgomery; Alderman William Remick, residence 543 North 3d street; Alderman John Devlin, residence 1351 North 2d street; John K. Valentine, residence Ashland house, 707 Arch; William B. Mann, residence northwest corner of Fifth and Green; Morris S. Parker, residence 35 North 15th street; John M. Riley, residence 938 Franklin street; Miss — Taylor, residence 611 North 4th street; Thomas C. Swain, residence 126 Girard avenue, below Howard; John Stephens, residence Sites street, below Girard avenue; William H. Swain, residence 126 Girard avenue, below Howard; Frank Rich, residence 1109 South street; James Mahoney, residence 1051 Germantown avenue; Joseph D. Spayd, residence unknown, clerk in 3d of 16th ward; of all which please take notice.

Respectfully,

JOHN P. VERREE,
Per C. GILPIN.

JOHN KLINE, Esq.

EXHIBIT E.

In the matter of the contested election for the third congressional district of Pennsylvania for the House of Representatives of the United States, for the thirty-seventh Congress.

DECEMBER 9, 1861.

SIR: You are hereby notified that in pursuance of a resolution of the House of Representatives of the United States passed the third day of December, 1861, it is my intention to examine witnesses before the honorable Joseph Eneu, recorder of the city of Philadelphia, at his office No. 432 Chestnut street, second story, in the city of Philadelphia, on Thursday the 19th day of December, A. D. 1861, at 12 o'clock m. of said day and each successive day thereafter, except Sundays, at the same time and place, till the testimony is taken and the witnesses examined.

The witnesses whom I intend to examine and their places of residence are as follows: Charles D. Knight, residence 720 Sansom street; Charles E. Bell, residence Chorman's regiment; John McGinley, residence Sixth above Montgomery; "Yank" Osborn, residence German-town road and Columbia, clerk of 1st of 19th ward; George Gillingham, residence 941 New Market street; of all of which you are requested to take notice.

Respectfully,

JOHN P. VERREE,
Per C. GILPIN.

JOHN KLINE, Esq.

EXHIBIT F.

In the matter of the contested election for the third congressional district of Pennsylvania for the House of Representatives of the United States, for the thirty-seventh Congress.

DECEMBER 11, 1861.

SIR: You are hereby notified that in pursuance of a resolution of the House of Representatives passed the third day of December, A. D., 1861, it is my intention to examine witnesses before the Hon. Joseph Eneu, recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, second story, in the city of Philadelphia, on Saturday the twenty-first day of December, A. D., 1861, at 12 o'clock m. of said day and each successive day thereafter, except Sundays, at the same time and place, till the testimony is taken and the witnesses examined.

The witnesses whom I intend to examine and their places of residence are as follows: Emma Taylor, residence 611 North 4th street; Alexander Crawford, residence 500 North Front, corner Noble; B. F.

Richley, residence 1109 South street, inspector 4th of 16th ward ;
 Frank Richie, residence unknown—was a lad employed by Alder-
 man Remick in January, 1861.

Respectfully,

JOHN P. VERREE,
 Per C. GILPIN.

JOHN KLINE, Esq.

EXHIBIT G.

In the matter of the contested election, Kline *vs.* Verree.

DECEMBER 12, 1861.

SIR: Take notice that I will also examine as a witness in the above
 case Alfred Mason, lampmaker, residence 6th and Meetter street,
 on Monday, the 23d day of December, A. D. 1861.

Respectfully,

JOHN P. VERREE,
 Per CHARLES GILPIN.

JOHN KLINE, Esq.

EXHIBIT H.

In the matter of the contested election in the third congressional
 district of Pennsylvania, Kline *vs.* Verree.

DECEMBER 13, 1861.

SIR: You will please take notice that I will also examine as a wit-
 ness in the above case Charles Morrison, residence No. 157 Laurel
 street, on Monday, the 23d day of December, A. D. 1861, before
 Recorder Eneu, at his office.

Respectfully,

JOHN P. VERREE,
 Per C. GILPIN.

JOHN KLINE, Esq.

EXHIBIT I.

PHILADELPHIA, *October 9, 1860.*

Tally list third division sixteenth ward.

For governor :

Henry D. Foster.....	171
Andrew G. Curtin.....	184

For Congress :

John Kline	166
John P. Verree.....	182
George J. Hamilton.....	6

For representative :

John S. Reihl.....	154
Isaac A. Sheppard.....	193
W. M. B. Ball.....	7

For recorder :

George W. Wunder.....	162
Alfred C. Harmer.....	183
Charles D. Freeman.....	10

For clerk of court of quarter sessions :

Philip H. Lutts.....	183
George H. Moore.....	164
George K. Swearingen.....	9

For prothonotary of district court :

William Loughlin.....	162
Philip S. White.....	183
James A. Sloan.....	10

For coroner :

Andrew Lowry.....	160
Anthony Conrad.....	184
E. B. Shapleigh.....	12

H. MONHEIMER, *Judge.*JOHN COSSART, } *Inspectors.*

JAMES BAXTER, }

JOS. D. SPAYD, } *Clerks.*

WILLIAM H. WHITE, }

CITY AND COUNTY OF PHILADELPHIA, ss :

I, Charles D. Knight, prothonotary of the court of common pleas, for the city and county aforesaid, do certify the foregoing writing to be a true copy of the "tally list" of the election held as herein particularly set forth, as the same remains in my office.

Witness my hand and seal of said court this thirty-first day of January, A. D. 1861.

[L. s.]

CHARLES D. KNIGHT.

EXHIBIT K.

Tally list of votes polled in third precinct eleventh ward, October 9, 1860.

For governor :

Henry D. Foster.....	136
Andrew G. Curtin.....	160

For Congress :

John Kline.....	141
John P. Verree.....	151
George J. Hamilton.....	2

For representative :

Henry Dunlap	133
David Jones	159
Joseph P. Elliott	3

For recorder of deeds :

George W. Wunder	131
Alfred C. Harmer	161
Charles D. Freeman	3

For clerk of court of quarter sessions :

Philip H. Lutts	130
George H. Moore	160
George K. Swearingen	3

For prothonotary of district court :

William Loughlin	132
Philip S. White	160
James A. Sloan	3

For coroner :

Andrew Lowry	131
Anthony Conrad	161
Dr. E. B. Shapleigh	3

CITY AND COUNTY OF PHILADELPHIA, ss :

I, Charles D. Knight, prothonotary of the court of common pleas, for the city and county aforesaid, do certify the foregoing writing to be a true copy of the "tally list" of the election held as herein particularly set forth, as the same remains in my office.

Witness my hand and the seal of the said court this thirty-first day of January, A. D. 1861.

[L. S.]

CHARLES D. KNIGHT.

EXHIBIT L.

First division nineteenth ward.

For governor:

Andrew G. Curtin	334
Henry D. Foster	219

For Congress, 3d district:

John P. Verree	321
John Kline	222
George J. Hamilton	4

For representative:

Charles B. Ford	330
William D. Morrison	213
Thomas McAdams	2

For recorder:

Alfred C. Harmer	335
George W. Wunder	209
Charles D. Freeman	8

For clerk of court of quarter sessions:

George H. Moore	328
Philip H. Lutts	215
George K. Swearingen	8

For prothonotary of district court:

Philip S. White	335
William Loughlin	206
James A. Sloan	9

For coroner:

Antony Conrad	338
Andrew Lowry	206
E. B. Shapleigh	9

CITY AND COUNTY OF PHILADELPHIA, ss:

I, Charles D. Knight, prothonotary of the court of common pleas for the city and county aforesaid, do certify the foregoing writing to be a true copy of the "tally list" of the election held as herein particularly set forth, as the same remains in my office.

Witness my hand and the seal of said court this 31st day of January, A. D. 1861.

CHAS. D. KNIGHT.

EXHIBIT M.

Section 32d of the consolidation act requires that the annexed certificate shall be filed in the office of the prothonotary of the court of common pleas, at or before 12 o'clock on the day succeeding the election, under a penalty of fifty dollars, to be levied and collected by the sheriff. And in case such certificate shall not be so filed, the court is directed to issue an attachment to compel its production.

Eleventh ward, third division.

The undersigned, judge of the third division of the eleventh ward, city of Philadelphia, does certify that at an election held in accordance to law, on Tuesday, October 9, 1860, at the house of Anthony Campbell, corner Front and Pegg streets, the following persons received the number of votes attached to their names for the offices designated.

B. MARKLEY, Judge.

For governor:

Henry D. Foster	136
Andrew G. Curtin	160

For member of Congress:

John Kline	141
John P. Verree	151
George J. Hamilton	2

For representative:

Henry Dunlap	133
David Jones	159
Joseph P. Elliot	3

For recorder of deeds:

George W. Wunder	131
Alfred C. Harmer	161
Charles D. Freeman	3

For clerk of court of quarter sessions:

Philip H. Lutts	130
George H. Moore	160
George K. Swearingen	3

For prothonotary of district court:

William Laughlin	132
Philip S. White	160
James A. Sloan	3

For coroner:

Andrew Lowry	131
Anthony Conrad	161
Dr. E. B. Shapleigh	3

EXHIBIT N.

List of voters of the third division of eleventh ward, October 9, 1860.

	County officers.	State officers.
1 Joseph Eckley	1	1
Phineas M. Jones	1	1
William Coulter	1	1
Thomas Robinson, jr.	1	1
5 Lawrence Kelley	1	1
Michael Andrew, jr.	1	1
John Mirkel, jr.	1	1
Christian Hagenstater	1	1
Bernard Klein	1	1
10 A. L. Crawford	1	1
Edwin B. Travice	1	1
David Every	1	1
Emanuel Marks	1	1
Joseph Myers	1	1
15 John G. Myers	1	1
Robert Smith	1	1
17 William Knighton	1	1

		County officers.	State officers.
18	Peter Berk.....	1	1
	Henry Blumenthal.....	1	1
20	John Buckley.....	1	1
	Patrick Farrell, (age).....	1	1
	Samuel Fandig.....	1	1
	William Male, (age).....	1	1
	Max Hartz.....	1	1
25	Henry Eichenlever.....	1	1
	John J. Marr.....	1	1
	Henry Keel.....	1	1
	Charles Seider.....	1	1
	Charles Albright.....	1	1
30	George D. Savin.....	1	1
	Michael Hartman.....	1	1
	Jacob Albright.....	1	1
	J. Franks.....	1	1
	Daniel Hager.....	1	1
35	Jacob Kreamer.....	1	1
	William McLean.....	1	1
	Henry Plews.....	1	1
	Samuel Firth.....	1	1
	Everet Frank.....	1	1
40	Frederick Myers.....	1	1
	Charles Massey.....	1	1
	Thomas McCrudden.....	1	1
	Louis Gross.....	1	1
	Frederick Smith.....	1	1
45	James Philipp.....	1	1
	William Hopkins.....	1	1
	Samuel W. Arbuckle.....	1	1
	Tobias Crawford.....	1	1
	William Eckley, jr.....	1	1
50	James P. Coulter.....	1	1
	John G. Keyser.....	1	1
	Thomas E. Little.....	1	1
	George Munroe.....	1	1
	William Platt, (age).....	1	1
55	George Jones.....	1	1
	Joseph Kensil.....	1	1
	George H. Koechlein.....	1	1
	Bartley Haffey.....	1	1
	George Tyler.....	1	1
60	Joseph W. Andress.....	1	1
	James McCrudden.....	1	1
	Franklin J. Smith.....	1	1
	William Male.....	1	1
	Anthony Campbell.....	1	1
65	Edwin A. Smith.....	1	1
66	Benjamin Markley.....	1	1

		County officers.	State officers.
67	Jeremiah Robinson	1	1
	Owen Scullin	1	1
	Joseph Mirkil	1	1
70	John Emick	1	1
	Samuel C. Jacoby	1	1
	William Stern	1	1
	John Hute	1	1
	Christian Breisenbratz	1	1
75	George Eisele	1	1
	Morris Warner	1	1
	Samuel Hood	1	1
	James Starr	1	1
	George Wonderly	1	1
80	Frederick Wahl	1	1
	Hugh McCrudden	1	1
	William Armstrong	1	1
	Christian Ehrle	1	1
	Perry Mirkil	1	1
85	Johnson Craig, (age)	1	1
	Charles Rizer	1	1
	John Glasby	1	1
	William Hill	1	1
	Thomas Bell	1	1
90	Conrad B. Andress	1	1
	David Smith	1	1
	William Westcott	1	1
	Joseph Clements	1	1
	William Righter	1	1
95	John Shreeve	1	1
	Silas Yerkes, jr.	1	1
	Silas Yerkes, sr.	1	1
	John Haffey	1	1
	John Carlin	1	1
100	L. Reinfried	1	1
	John Diddeboch	1	1
	Samuel Armstrong	1	1
	William Baker	1	1
	Stephen Buckman	1	1
105	George Planck	1	1
	Henry Hamee	1	1
	James Carey	1	1
	John May	1	1
	Robert Kelly	1	1
110	Henry Carlin	1	1
	William White	1	1
	Andrew Howard	1	1
	Robert McCreedy	1	1
	J. M. Ross	1	1
115	Charles D. Baker	1	1

		County officers	State officers.
116	Andrew Mintzer.....	1	1
	Patrick Shevelin.....	1	1
	Samuel Glasby.....	1	1
	William Hacker.....	1	1
120	Henry Unger.....	1	1
	Andrew Farrey.....	1	1
	Thomas Martin.....	1	1
	John Coleman.....	1	1
	John J. Donahugh.....	1	1
125	M. D. Drake.....	1	1
	John Hartman.....	1	1
	Thomas Robinson, sr.....	1	1
	Daniel Weaver (age).....	1	1
	William Engard.....	1	1
130	Thornton Doran.....	1	1
	A. A. Berger.....	1	1
	John Cowleiver.....	1	1
	William K. Feters.....	1	1
	William Myers (age).....	1	1
135	Samuel Lehr.....	1	1
	John Muldoon.....	1	1
	Andrew Ferreey (tax).....	1	1
	John Clousen.....	1	1
	August Senne.....	1	1
140	Matthew Sekinger (age).....	1	1
	Frank Eberle.....	1	1
	Thomas Faney.....	1	1
	Michael Andress, sr.....	1	1
	Israel Kohn.....	1	1
145	Owen Shevlin.....	1	1
	Augustus B. Schlichter (tax).....	1	1
	John Foley.....	1	1
	William Kensil.....	1	1
	Francis Lawton.....	1	1
150	Edward Hanson.....	1	1
	William Krouse.....	1	1
	Leopold Teuterer.....	1	1
	Edward Still.....	1	1
	Andrew Maag.....	1	1
155	Wm. Burkhardt.....	1	1
	Wm. Elder.....	1	1
	B. Greenewald.....	1	1
	Peter McQuaid.....	1	1
	Andrew McCreedy.....	1	1
160	Lucas Wright.....	1	1
	Jacob P. Wolf.....	1	1
	Patrick Kelly.....	1	1
	Micheal Farry.....	1	1
164	B. F. Sheim.....	1	1

		County officers.	State officers.
165	James Lower.....	1	1
	Charles Fisler.....	1	1
	William H. Yurn.....	1	1
	Joseph Lower.....	1	1
	Peter Sheppard.....	1	1
170	Martin Pettit.....	1	1
	Ezekiel Buckmaster.....	1	1
	Henry Crawford.....	1	1
	John Lower.....	1	1
	Daniel Ireland.....	1	1
175	John Bradijer.....	1	1
	Stephen Boyle.....	1	1
	Paul Knofflock.....	1	1
	Peter Jacobus.....	1	1
	James Haffy.....	1	1
180	Adam Wagner.....	1	1
	John H. Williams.....	1	1
	Alwi Kensie.....	1	1
	George Talmen.....	1	1
	Thomas Keenan.....	1	1
185	Samuel Fabrien.....	1	1
	Edward Maguire.....	1	1
	John Guyart, jr., (age).....	1	1
	H. Arbuckle.....	1	1
	Philip Jacobus.....	1	1
190	S. R. Singlewood.....	1	1
	John Duff.....	1	1
	Eleazer Beebe.....	1	1
	John Kahn.....	1	1
	Wm. Eckley, sr.....	1	1
195	James Kelly, (tax).....	1	1
	John Gilligan.....	1	1
	Frederick Phillipp.....	1	1
	J. Kaleber.....	1	1
	Peter B. Watter.....	1	1
200	Charles Hull.....	1	1
	William Philips.....	1	1
	John Morris.....	1	1
	Benjamin Robinson.....	1	1
	Alexander Renstein.....	1	1
205	Michael Palmer.....	1	1
	Robert Clyde.....	1	1
	Benjamin R. Watter.....	1	1
	William Beggs.....	1	1
	Michael Myers.....	1	1
210	Godfrey Haymes.....	1	1
	H. H. Haynes.....	1	1
	Adam Wood.....	1	1
213	Anthony Zeesal.....	1	1

		County officers.	State officers.
214	John L. Campbell.....	1	1
215	John Metz.....	1	1
	Bart. Fitzpatrick.....	1	1
	John Peck.....	1	1
	Charles Kensie.....	1	1
	Charles C. Thorman.....	1	1
220	Henry Rine.....	1	1
	Conrad Rentz.....	1	1
	Joseph Kerbaugh.....	1	1
	John Rush.....	1	1
	John Oram.....	1	1
225	Archibald Arbuckle.....	1	1
	H. W. Karstein.....	1	1
	William Boyd.....	1	1
	Anthony Myer.....	1	1
	William Curry.....	1	1
230	Philip Watters.....	1	1
	David Hood.....	1	1
	Thomas Little.....	1	1
	John G. Bryant.....	1	1
	John Guyant, sr.....	1	1
235	John A. Krouse.....	1	1
	Daniel Scull.....	1	1
	Francis Kuhn.....	1	1
	James Berry.....	1	1
	John Boggs.....	1	1
240	Andreas Crauder.....	1	1
	James Robb.....	1	1
	Elliott Kelly.....	1	1
	Robert Stewart.....	1	1
	Lewis Eisenhoun.....	1	1
245	J. Q. A. Sayres.....	1	1
	John Fritz.....	1	1
	Antonie Beck.....	1	1
	John Wurter.....	1	1
	George Andress.....	1	1
250	Jesse Jones.....	1	1
	John Harron.....	1	1
	Robert Steel.....	1	1
	G. Mattson.....	1	1
	Charles Heim.....	1	1
255	Daniel Braddock, (tax).....	1	1
	Henry C. Dreby.....	1	1
	George W. Little.....	1	1
	John Branen, (tax).....	1	1
	E. H. Murray.....	1	1
260	Robert McCrudden.....	1	1
	Henry Hopkins.....	1	1
262	George White.....	1	1

		County officers.	State officers.
263	George A. Kleinsthrolt.....	1	1
	William Keegan.....	1	1
265	E. Manual Wolf.....	1	1
	Jacob Pettinger.....	1	1
	James Hebuck, (age).....	1	1
	James McCoy, (tax).....	1	1
	Herman Shultz.....	1	1
270	Joseph T. Kelly.....	1	1
	George Mathew.....	1	1
	John Robinson.....	1	1
	Peter Baker.....	1	1
	Benjamin H. Turner.....	1	1
275	Jacob Weiss.....	1	1
	Alexander Patterson.....	1	1
	George Carlen.....	1	1
	James Massey.....	1	1
	Edward Haffey.....	1	1
280	David Wellar.....	1	1
	Gotte P. Bower.....	1	1
	Theophilus Stahler.....	1	1
	Thomas Smith.....	1	1
	Lewis Babst.....	1	1
285	L. Stockman.....	1	1
	George H. Koechlein, jr.....	1	1
	Patrick McKenna.....	1	1
	Daniel Timmins.....	1	1
	Richard Barratt.....	1	1
290	James Carr.....	1	1
	Martin Myer.....	1	1
	James Brennan.....	1	1
	Cornelius McDevett.....	1	1
	M. T. Hickey, (age).....	1	1
295	Robert S. Smith.....	1	1
296	Theodore Armstrong.....	1	1

CITY AND COUNTY OF PHILADELPHIA, ss:

I, Charles D. Knight, prothonotary of the court of common pleas for the city and county aforesaid, do certify the foregoing writing to be a true and correct copy of the "list of voters" of the third division of the eleventh ward, as the same remain filed in my office, for the election held October 9, 1860.

[L. s.] Witness my hand and seal of said court this second day of February, A. D. 1861.

CHARLES D. KNIGHT.

EXHIBIT O.

List of voters of the third division, sixteenth ward.

	County officers.	State officers.
1 John Scott.....	1	1
2 Sam'l B. Jones.....	1	1
3 Matthew Robinson.....	1	1
4 John Young.....	1	1
5 Thomas Baner.....	1	1
6 S. R. Kepper.....	1	1
7 Richard Chapman.....	1	1
8 Henry B. Reel.....	1	1
9 William Newton.....	1	1
10 Sam'l H. Kreider.....	1	1
11 Philip Sincraft.....	1	1
12 James Logan.....	1	1
13 Charles W. Kreamer.....	1	1
14 Charles Miller.....	1	1
15 Joseph Dembaker.....	1	1
16 John Breesford.....	1	1
17 Charles Devlin.....	1	1
18 John Zeigler.....	1	1
19 John M. Davidson.....	1	1
20 Jos. J. Gillingham.....	1	1
21 John White.....	1	1
22 Isaiah Hazleton.....	1	1
23 Jacob Sheller.....	1	1
24 William Simpson.....	1	1
25 William Kagel.....	1	1
26 Thomas Frank.....	1	1
27 William Harris.....	1	1
28 William Sheppard.....	1	1
29 John F. Mecutcheon.....	1	1
30 Thomas Hall.....	1	1
31 Michael Hanberger.....	1	1
32 William Lee.....	1	1
33 Joseph Stiles.....	1	1
34 Joseph Hess.....	1	1
35 George Swint.....	1	1
36 Frederick Gebinger.....	1	1
37 Thomas J. White.....	1	1
38 Philip Reap.....	1	1
39 John Powell.....	1	1
40 William Lake.....	1	1
41 John Hoch.....	1	1
42 James Altemus.....	1	1
43 Albanus White.....	1	1
44 John Tenlin.....	1	1
45 John R. King.....	1	1

	County officers.	State officers.
46 No vote.		
47 George Watson	1	1
48 Richard Bunting	1	1
49 William Fergus	1	1
50 Henry Ferman	1	1
51 Archibald Gray	1	1
52 William Henry	1	1
53 Isaac B. Eldridge	1	1
54 Henry D. Rapp	1	1
55 William Morris	1	1
56 Gustavus Mood	1	1
57 Jos. C. Smith, sr	1	1
58 Peter Gilbert	1	1
59 Jos. C. Smith, jr	1	1
60 Jacob Adler	1	1
61 Alfred Fitler	1	1
62 John F. Minnick	1	1
63 Edwin A. Vantrump, (on age)	1	1
64 John O. Maro	1	1
65 Joseph Jackson	1	1
66 Charles Piper	1	1
67 Wm. S. Grissom	1	1
68 Albert U. Eldridge	1	1
69 John Cox	1	1
70 William Kirk	1	1
71 Joseph Monheimer	1	1
72 William Kramer	1	1
73 Max Cammer	1	1
74 Bernard McGarvey	1	1
75 William S. Elder	1	1
76 Marcus Reese	1	1
77 Thomas Lesage	1	1
78 Charles Edwards	1	1
79 Thomas A. Stephens	1	1
80 Henry King	1	1
81 Benjamin Hubbard	1	1
82 George T. Haller	1	1
83 William S. Edwards	1	1
84 Alexander Seltzer	1	1
85 Hyam Monheimer	1	1
86 James C. Baxter	1	1
87 John Freck	1	1
88 Charles Weist	1	1
89 Abraham Britton	1	1
90 William Warren	1	1
91 Zekiel Jarmin	1	1
92 Thomas Barnes	1	1
93 John McGinnis	1	1

	County officers.	State officers.
94 John F. Rock, sr	1	1
95 Anthony Filemyr	1	1
96 James Thomas	1	1
97 Daniel Weckerly	1	1
98 John Simpson	1	1
99 W. J. Donoho	1	1
100 Evan J. Simpson	1	1
101 Charles Myer	1	1
102 Gotlieb Houser	1	1
103 Christian Hubbard	1	1
104 Joseph Stewart	1	1
105 James L. Delavan	1	1
106 Frederick Berger	1	1
107 George Grossman	1	1
108 Henry Reck	1	1
109 James Matthews	1	1
110 Daniel Brant	1	1
111 Anthony Elton	1	1
112 Peter Bowen	1	1
113 John Maag	1	1
114 William Buder	1	1
115 Jacob F. Gunkel	1	1
116 Richard Donovan	1	1
117 Edmond Shaw	1	1
118 Bernard Gocklin	1	1
119 Gustavus Werner	1	1
120 Henry Shoemaker	1	1
121 John Steck	1	1
122 Thomas Bankhead	1	1
123 Abraham Gudknecht	1	1
124 George Gudknecht	1	1
125 David Senior	1	1
126 Jacob C. Smith	1	1
127 John Cossart	1	1
128 William Hannis	1	1
129 Joseph Watts	1	1
130 Charles McNair	1	1
131 Ferdinand Kurt, (on age)	1	1
132 William A. Skerret	1	1
133 Conrad Reakert	1	1
134 William Gordon	1	1
135 William H. White	1	1
136 Joseph H. Cook	1	1
137 Casper Knitterstripe	1	1
138 Thomas Moran	1	1
139 Jos. D. Spayd	1	1
140 William D. Snyder	1	1
141 Aaron Isaacs	1	1
142 Jacob Wagner	1	1

	County officers.	State officers.
143 George Speil.....	1	1
144 A. P. Fongeray.....	1	1
145 John Munroe.....	1	1
146 Jesse Telford.....	1	1
147 Philip Winsler.....	1	1
148 Lawrence Reimensnider.....	1	1
149 F. T. Walton.....	1	1
150 Enoch Remick.....	1	1
151 John Everhart.....	1	1
152 Joseph Cossart.....	1	1
153 John George Roof.....	1	1
154 Daniel Davis.....	1	1
155 Ambrose Grigg.....	1	1
156 William Thele.....	1	1
157 Henry Light.....	1	1
158 Allen Cadwalader.....	1	1
159 William Hoskins.....	1	1
160 John Jackson.....	1	1
161 George W. Hoskins.....	1	1
162 John George Conrad.....	1	1
163 B. M. Buch.....	1	1
164 Joseph Myer.....	1	1
165 Charles Voss.....	1	1
166 Charles R. Egee.....	1	1
167 William Whiteman.....	1	1
168 Thomas Slater.....	1	1
169 Charles H. Banes.....	1	1
170 John Born.....	1	1
171 William Davidson.....	1	1
172 Henry Habesle.....	1	1
173 George W. Bunting.....	1	1
174 John Roberts.....	1	1
175 John T. Hoff.....	1	1
176 Joseph Rankin.....	1	1
177 Henry Degroot.....	1	1
178 Edward Willard.....	1	1
179 Clinton Fritz.....	1	1
180 Isaac A. Robinson, (on age).....	1	1
181 Edward Weisman.....	1	1
182 John L. Painter.....	1	1
183 John Gudknecht.....	1	1
184 Henry Minton.....	1	1
185 Charles Brant.....	1	1
186 Lawrence Handleg.....	1	1
187 Michael Boyle.....	1	1
188 Gustavus Erbacher.....	1	1
189 Jacob Buehler.....	1	1
190 Henry Kunzeknabe.....	1	1
191 John N. Ship.....	1	1

	County officers.	State officers.
192 Howard Thompson.....	1	1
193 Peter Schlafer.....	1	1
194 John Bowers.....	1	1
195 John Rody.....	1	1
196 Robert Morganstein.....	1	1
197 David Stout.....	1	1
198 John B. Adler.....	1	1
199 James R. Irons.....	1	1
200 George Lukens.....	1	1
201 John Goldsmith.....	1	1
202 Frederick Ebert.....	1	1
203 Charles C. Baker.....	1	1
204 James M. Delaney.....	1	1
205 Christian Reed.....	1	1
206 Robert Cunningham.....	1	1
207 William Cossart.....	1	1
208 George Goldsmith.....	1	1
209 Thomas Henderson.....	1	1
210 Albert Berger.....	1	1
211 Michael Kennedy.....	1	1
212 Maurice West.....	1	1
213 David Johnson.....	1	1
214 John S. Donohue.....	1	1
215 George B. Seibert.....	1	1
216 Peter Newton.....	1	1
217 Christian Dickel.....	1	1
218 John Schussler.....	1	1
219 David Ray.....	1	1
220 Comly Dudbridge.....	1	1
221 Mahlon Nice.....	1	1
222 Amos Jones.....	1	1
223 Charles Durell.....	1	1
224 Samuel Robinson.....	1	1
225 John Shearer.....	1	1
226 Robert Booth.....	1	1
227 Adam Smith.....	1	1
228 Samuel Reap.....	1	1
229 George W. Achenbach.....	1	1
230 Henry Everhart.....	1	1
231 David Fell.....	1	1
232 Henry C. Pierson.....	1	1
233 Henry Nenich.....	1	1
234 Jacob Wiser.....	1	1
235 John Cossart, sr.....	1	1
236 Alfred Gudknecht.....	1	1
337 William Alcock.....	1	1
238 John Dailey.....	1	1
239 John Weidman.....	1	1
240 Joseph Burr.....	1	1

	County officers.	State officers.
241 William Street	1	1
242 Henry Sparhawk	1	1
243 Jacob Fox	1	1
244 Frederick Ketzler	1	1
245 Peter Sherrick, jr	1	1
246 James M. Jones	1	1
247 Wm. C. Williamson	1	1
248 Robert Ellingsworth	1	1
249 Henry Trexler	1	1
250 George Cossart	1	1
251 Christopher Myers	1	1
252 William Hollowell	1	1
253 James Telford	1	1
254 George Morris	1	1
255 Thomas Murphy	1	1
256 John Gibel	1	1
257 Franklin L. Focer	1	1
258 John Steck, jr	1	1
259 Thomas J. Smith	1	1
260 Mahlon Dickerson	0	0
261 Reynolds Weaver	1	1
262 Henry M. Gray, jr	1	1
263 Edward Hanness, (on age)	1	1
264 William McCready	1	1
265 Charles Krumshield	1	1
266 Jacob Yeager	1	1
267 Matthew Robison	1	1
268 Jacob Steck	1	1
269 John Baird	1	1
270 Samuel Graham	1	1
271 Henry Mintzer	1	1
272 Charles Wurtz	1	1
273 G. S. Dickinson	1	1
274 Samuel Batt	1	1
275 John Schainlaver	1	1
276 Charles Roberts	1	1
277 Hosea Castle	1	1
278 Charles Schroeder	1	1
279 Charles Rump	1	1
280 Jehu Morris	1	1
281 Charles M. Edwards	1	1
282 Andrew Roth	1	1
283 Ellis Roth	1	1
284 James R. Robinson	1	1
285 Thomas Montgomery	1	1
286 Zimmerman Henry	1	1
287 George Schoneberger	1	1
288 J. Martin Stemler	1	1
289 John McDougal	1	1

	County officers.	State officers.
290 David Lewallen	1	1
291 Charles Cruzen	1	1
292 William Little	1	1
293 John Elmer	1	1
294 Patrick McCaffrey	1	1
295 James S. Hanna	1	1
296 Christian Jacobs	1	1
297 Henry Morris	1	1
298 James A. Haas	1	1
299 John Kiter	1	1
300 Aaron Arons	1	1
301 Joel Vasey	1	1
302 Augustus Spearhouse	1	1
303 John Bigger	1	1
304 Louis Fisher	1	1
305 George Friday	1	1
306 Frederick W. Keighley	1	1
307 Conrad Herman	1	1
308 Thomas Y. Henry, (on age)	1	1
309 Alexander Swan	1	1
310 William F. Sparhawk	1	1
311 Augustus Scheinke	1	1
312 James Glandon	1	1
313 John Shiffler	1	1
314 James Ray	1	1
315 Jacob Pearson	1	1
316 James Omar	1	1
317 Louis Wolfe	1	1
318 John C. Everhart	1	1
319 Augustus Rausch	1	1
320 Wm. R. Brady	1	1
321 Wm. Deal	1	1
322 Wm. B. Burroughs	1	1
323 Wm. A. Dougherty	1	1
324 Patrick McQuaid	1	1
325 George Gahm	1	1
326 Louis Deal	1	1
327 Adam Weingarten	1	1
328 Henry Gray	1	1
329 Viel Roshert	1	1
330 Thos. E. Proyer	1	1
331 Spencer M. Bermerman	1	1
332 John F. Cook, (on age)	1	1
333 Charles Cook	1	1
334 Edward H. Zitsman	1	1
335 Peter Gregson	1	1
336 Wm. H. Chamberlin	1	1
337 William Everhart	0	0
338 Jacob Fox, (on age)	1	1

	County officers.	State officers.
339 Joseph Bernhardt.....	1	1
340 Robert R. Forman.....	1	1
341 James Truxler.....	1	1
342 Christopher Hyme.....	1	1
343 Richard Eckersly.....	1	1
344 Andrew Glandon.....	1	1
345 George Cossert.....	1	1
346 Robert H. Wilson.....	1	1
347 Ernest Gray.....	1	1
348 George Ascough.....	1	1
349 Jacob Stout.....	1	1
350 Henry Marshall.....	1	1
351 Henry Stool.....	1	1
352 John D. Williamson.....	1	1
353 Albert Gearhart.....	1	1
354 Thomas Smith.....	1	1
355 William Wildermuth.....	1	1
356 Ignatius Linehard.....	1	1
357 Charles J. Berger.....	1	1
358 John Allen.....	1	1

CITY AND COUNTY OF PHILADELPHIA, ss:

I, Charles D. Knight, prothonotary of the court of common pleas for the city and county aforesaid, do certify the foregoing writing to be a true and correct copy of the "list of voters" of the third division of the sixteenth ward, at an election held on the 9th day of October, A. D. 1860, as the same remain filed in my office.

[L. s.] Witness my hand and seal of said court, this 2d day of February, A. D. 1861.

CHAS. D. KNIGHT.

EXHIBIT P.

STATE OF PENNSYLVANIA, *City of Philadelphia*, ss:

Christian F. Erichson, being duly sworn, did depose and say, that, as clerk of Joseph Eneu, esq., recorder of the city of Philadelphia, before whom the testimony of witnesses is to be taken, in the matter of the contest for a seat in the House of Representatives of the United States of America, in the thirty-seventh Congress, between John Kline, contestant, and John P. Verree, incumbent, he would impartially and truly write down the whole of the evidence of each and every witness produced, sworn or affirmed, and examined, in relation to any matter touching said contest, and in all things truly and faithfully perform his duty as clerk, to the best of his ability.

CHRISTIAN F. ERICHSON.

Sworn to and subscribed before me this 17th day of December, A. D. 1861.

JOSEPH ENEU, *Recorder*.

UNITED STATES OF AMERICA,

Commonwealth of Pennsylvania, ss:

To Thomas E. Little, David Vickery, Benjamin Markley, William F. Beggs, Jeremiah Robinson, Hyam Monheimer, John H. Bringhurst, James C. Baxter, John F. Cossart, George H. Mecke, George W. Williams, Theophilus T. Derringer, Samuel M. Lane, Samuel L. McKinney, Samuel Taylor, William H. White, Joseph J. Gillingham, Charles D. Knight, Daniel M. Boyd, Albert E. Eldridge, Thomas Haig, jr., William Remick, John Devlin, John K. Valentine, William B. Mann, Morris S. Parker, John M. Riley, Emma Taylor, Thomas C. Swain, John Stephens, William H. Swain, Frank Rich, James Mahony, Joseph D. Spayd, Charles E. Bell, John McGinley, _____ Osborn, George Gillingham, Alexander Crawford, B. F. Richley, Alfred Mason, Frank Richie, Charles Morrison:

I command you and each of you that, setting aside all manner of business and excuses, you be and appear in your proper person before me, at my office, No. 432 Chestnut street, in the city of Philadelphia, on Tuesday, the seventeenth day of December, A. D. 1861, at twelve o'clock meridian of said day, to testify all and singular those things which you shall know, or of which you may be inquired, touching and concerning the election for member of Congress held in the third congressional district of Pennsylvania on the ninth day of October, A. D. 1860, the validity of which said election is contested by John Kline against John P. Verree, who has been proclaimed elected by William F. Packer, governor of Pennsylvania. Your attendance to appear is enjoined and required by a law of the United States, entitled "An act to prescribe the mode of obtaining evidence in cases of contested elections," approved the 19th day of February, A. D. 1851. Herein fail not.

Witness my hand and seal this 7th day of December, A. D. 1861.

JOSEPH ENEU, [L. s.]

Recorder of the city of Philadelphia.

In the matter of the contested election in the third congressional district of Pennsylvania for a seat to represent said district in the House of Representatives of the United States of America, in the thirty-seventh Congress, between John Kline, contestant, and John P. Verree, incumbent.

Depositions of witnesses, taken before Joseph Eneu, esq., recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, in the said city, on part of John P. Verree, esq., incumbent, in pursuance of a resolution of the House of Representatives of the United States of America, passed the third day of December, A. D. 1861 a copy of which is hereunto annexed marked A.

RECORDER'S OFFICE, 432 CHESTNUT STREET,

Philadelphia, December 17, 1861.

Present: Charles Gilpin, esq., of counsel for John P. Verree, esq., the incumbent; Edward McCabe and William S. Hurst, esqrs., of counsel for John Kline, esq., contestant; and Mr. Kline in person.

The recorder appointed Christian F. Erichson clerk, to write or transcribe the testimony in the above matter, (see oath hereto annexed, marked P.)

Mr. Gilpin, on behalf of Mr. Verree, offers in evidence the resolution of the House of Representatives, dated the third day of December, A. D. 1861, and hereunto annexed, marked A.

Mr. Gilpin, counsel for incumbent, before proceeding to take any testimony under the resolution of the House of Representatives of the third of December, A. D. 1861, states and requests the commissioner to put his statement on the record that all the evidence offered by the incumbent will be in rebuttal of the evidence in chief offered by contestant. That it will be limited and confined to the vote of—

The first division of the 19th ward;

The third division of the 11th ward; and

The third division of the 16th ward;

To the condition of the boxes of said divisions and their contents at the time they were sealed up by the election officers ;

To the custody and care of them afterwards ; and

To the condition of said boxes and their contents at the time they were opened and counted at the office of Alderman Remick.

Mr. McCabe, of counsel for contestant, desires before the investigation is proceeded with, that the recorder, Mr. Joseph Eneu, before whom the testimony is to be taken, as per the notices received by contestant, will state in what part of the city of Philadelphia he resides, and in what congressional district; and also in what part of the city of Philadelphia, and in what congressional district this testimony is being taken.

Hereupon the recorder states that he resides in the first congressional district, and that his office is in the second congressional district, and that his residence is 1033 South Tenth street, second ward, city of Philadelphia.

Mr. McCabe objects to any testimony being taken by incumbent, in relation to the contested election case in the third congressional district, before recorder Joseph Eneu, by virtue of any resolution of the House of Representatives of the United States, for these reasons :

1. Because the said recorder resides in the first congressional district, and not in the third congressional district.

2. Because by act of Congress, passed the 19th day of February, A. D. 1851, section the third, it is provided that "when any contestant or returned member shall be desirous of obtaining testimony respecting a congressional election, application shall be made to, and the testimony taken before some officer, magistrate or recorder, who shall reside within the congressional district in which such contested congressional election was held."

3. Because the House of Representatives cannot, by resolution passed by itself, abrogate and annul a law of the United States.

4. Because the Constitution of the United State directs that Congress alone shall have power to make regulations or laws concerning elections.

Mr. Gilpin offers in evidence the several copies of notices hereto annexed, marked, respectively, B, C, D, E, F, G, H ; the service of the first of which, "B," is admitted by contestant's counsel to have been made on the 7th of December, 1861, on contestant, and the service of all the others to have been made on contestant, on the several days on which they respectively bear date.

Hyam Monheimer, a witness of lawful age, being duly sworn, deposes and says :

(Mr. Gilpin states that the witness is examined now, as ten day's notice had not been given when he was examined on the 28th of January, 1861, before Alderman Remick and Mecke. Mr. McCabe, for the contestant, makes the same objections to the examination of this witness that he made to this investigation being proceeded with before the recorder.)

Examination by Mr. Gilpin.

Question. Did you act as an officer of the election in the third division of the 16th Ward, in October, 1860, and were you not of the same political party that nominated and supported John Kline for Congress ?

Answer. I was judge of that election and voted the democratic ticket, and that is of the same party that Mr. Kline belongs to.

Question. Did you and the other officers of the election sign a division return to be filed in the office of the prothonotary of the court of common pleas, the morning after the election ?

Answer. We signed them that night, election night, and I returned it in the morning to the office of the prothonotary.

Question. Was it a correct, true, and accurate return of the vote given for every candidate named and returned thereon ?

Answer. I think it was, as far as I know, or was capable of judging.

Question. Did you, yourself, count, carefully and accurately, the vote set down for member of Congress ?

Answer. The tickets were handed to me, and I examined and counted them, and thought it was correct.

Question. Can you state the vote that was received and returned for each member of Congress ?

Answer. I cannot give it to you now ; I don't know the exact number now ; I did know at one time ; I think I gave it to you, Mr. Gilpin, when I was examined before.

Question. Were the numbers given by you, in your former examination, the true and correct vote cast, counted, and returned for each member of Congress ?

(Mr. McCabe objects ; first, because it is irregular for a party to ask his own witness what he swore to on a former occasion ; secondly, because the occasion now referred to is an irregular and illegal examination of the witness, and this is an indirect mode of introducing testimony thus irregular and illegally taken ; thirdly, because the question assumes the witness gave any numbers of votes in his

former examination, as the record shows that a certified copy of a paper was irregularly handed to the witness, which copy was not in his handwriting, to refresh his memory.)

Answer. Really, I can't tell you that—whether they were or not; I don't recollect the numbers.

Question. If you did give the numbers, was it a true and correct statement of them, or otherwise?

(Objected to for the same reasons.)

Answer. I think it was a correct statement, so far as I can recollect.

Question. Was there not a tally list kept by each of the clerks in which the vote for member of Congress was tallied?

Answer. Yes, sir.

Question. Was one of the tally lists returned to the office of the court of common pleas on the morning after the election?

Answer. Yes, sir.

Question. By whom; yourself?

Answer. Yes; I returned it.

Question. State the manner in which you counted off the vote for State officers after the polls closed.

Answer. The two inspectors and myself opened the tickets; the two inspectors counted them; they were handed to me; I counted them and twisted them up, laid them on one side on the table; that is all; I believed somebody else might have put the tickets in the boxes; as far as I recollect, the tickets, when I counted them, I laid them one side on the table.

Question. How did you put them up, or twist them up?

Answer. In tens; I counted ten tickets and then twisted them.

Question. Which tickets did you count first, the democratic or the people's ticket?

Answer. I cannot recollect which.

Question. Did you count the full tickets or the scratched tickets first?

Answer. We counted the full tickets first.

Question. When were the full tickets so counted and folded into tens, tallied on the tally list; was it before or after you counted the scratched tickets?

Answer. I can hardly answer that question; I don't recollect; I understand the question very well; I was judge of the last election, and I don't recollect how the "slip" tickets were counted.

Question. Can you tell how the full bundles of ten were tallied on the tally list by the clerks; were they not each one tallied, when called out, by the Roman numeral X, or a mark resembling it, on the tally list?

(Mr. McCabe objects to the last branch of this question as leading, after the witness has stated that he does not recollect the matter inquired of.)

Answer. I called out the tens; the clerks sit some distance; I could not tell how they put them down, any more than I called out ten for so and so, and they put them down; that is, I judge they put them down; I did not look at them to see if they did or not; as soon as I

twisted up one ten, another was handed me, and I did not look to see what they did.

Question. Did you not sign the tally list which you filed in the prothonotary's office?

Answer. Yes, sir; I think I did.

Question. Have you any doubt as to its containing on its face a true and correct statement of the vote which had been cast, tallied and returned for member of Congress?

Answer. No, sir; I do not think I have.

Question. Look at this paper, a certified copy of the tally list of the third division of the sixteenth ward, and state whether, from your recollection of the tally list filed, and a comparison of it with this paper shown to you, the bundles of ten were not marked on it, as they are here, with an X or a cross?

(Mr. McCabe objects to the question for the following reasons: First, because the paper is a copy of an alleged original, which is accessible and can be produced; and secondly, because the question is leading; and thirdly, because the recollection of the witness is attempted to be refreshed by a paper not in his handwriting. The paper referred to is hereto annexed, marked I, subject to the objections of the contestant's counsel.)

Answer. It looks something like the vote, and I do not recollect the number of votes.

Question. State how the scratched tickets, or tickets with stickers, (I mean State tickets,) were counted and tallied. Were they counted in bundles of tens, or were they called off, counted, and tallied, each one separately?

Answer. I cannot tell that, how they were counted. If there were ten, I should think they would have been counted as ten.

Question. Were the scratched tickets counted separately from the full tickets?

Answer. They were counted separately.

Cross-examination by Mr. Hirst.

Question. How many election papers were signed that night after the polls were closed in your division?

Answer. That I do not recollect.

Question. How many officers were voted for at that election?

Answer. That I cannot tell.

Question. How many papers were signed relating to each officer voted for?

Answer. I don't recollect anything of the kind.

Question. Were there not as many as twenty-three candidates voted for, for the different offices?

(Mr. Hirst adds that the paper you just referred to may assist you to count the number; and the paper referred to, is hereto annexed, marked I; and Mr. Gilpin desires it noted that Mr. Hirst hands the paper, Exhibit I, to the witness. Mr. Hirst states that he does not consider the cross-examining of the witness upon a paper offered in evidence-in-chief makes it legal evidence.)

Answer. Twenty-three, of course.

Question. Can you state the vote given for either of those twenty-three candidates?

Answer. No, sir.

Question. Have you any means of knowing except by reference to the tally list?

Answer. Only by referring to the tally list.

Question. Did you keep any memorandum or record of the vote as you counted it?

Answer. Not as I counted it. Afterwards I made out a list myself of the vote from the tally list. It must have been from the tally list.

Question. The ballot-box, of course, would exhibit the true vote, would it not?

(Objected to by Mr. Gilpin.)

Answer. I think it would; both tally lists were the same.

Question. The vote on the tally lists depended for accuracy, did it not, upon the accuracy of the officers who called off the votes, and the accuracy of the clerks who recorded them?

Answer. Yes, sir.

Question. If any mistake existed, the ballots in the ballot-box would correct it, would they not?

Answer. I should think so.

Question. You are aware of a recount of that vote, are you not, by which it was ascertained that the ballots in the box were 166 for Mr. Verree, whereas the tally list exhibited the vote of 166 for Mr. Kline?

Answer. I heard of the ballots being recounted, but I don't recollect the vote.

Question. Have you not said, and do you not suppose, that those figures may have been transposed by the clerks?

Answer. That I can't tell.

Question. There are two branches of that question; the first, have you not expressed that opinion to others; and, secondly, do you not entertain it yourself?

Answer. I have not expressed that opinion, nor entertained it, nor do I entertain it. I have said that I believed that John Kline was honestly elected; that was all I expressed or entertained.

Re-examination by Mr. Gilpin.

Question. Have you any doubt that paper, Exhibit I, is a correct statement of the vote of the 3d division of the 16th ward?

Answer. It looks something like the vote.

Question. Was the original tally list filed in the office a correct statement of the vote?

Answer. Yes, sir, I think it was; that was the vote that was given out.

Question. You have been asked, on cross-examination, "If any mistake existed, the ballots in the ballot-box would correct it, would

they not;" and you answered, "I should think so." Would you think so if you suspected that the contents of the box had been altered after they were sealed up by you, and before they were recounted?

Answer. I shouldn't think that I would have a right to suspect that the ballot-boxes would be opened.

Question. But if you did suspect, or had reason to suspect, would you then think so?

Answer. Well, I don't suspect, and wouldn't have reason to suspect. I don't know that such a thing could be done.

Question. Your answer to the cross-examination above alluded to, was it not based on the supposition that there had been no opportunity to tamper with the contents of the box, and that they had not been tampered with from the time of their being sealed up till the time of the recount?

Answer. I have said that I supposed the ballot-box would settle the whole thing. I should think so; it ought to.

HYAM MONHEIMER,
940 New Market street.

Attest:

JOSEPH ENEU, *Recorder.*

James C. Baxter, house carpenter, residing at No. 6 Cozzens Place, in the city of Philadelphia, a witness produced and sworn, deposes and says, (subject to the exceptions hereafter assigned by contestant's counsel:)

Examination by Mr. Gilpin.

Question. State whether you were an officer of the election of the 3d division of the 16th ward in October, 1869.

Answer. I was; I was an inspector.

Question. State whether you were of the same or different political party from the one that nominated and supported Mr. Kline for Congress.

Answer. I voted for Mr. Kline and the whole democratic ticket, and was of that party.

Question. State whether you signed a tally-list after the vote was counted off and tallied.

(Mr. McCabe objects to the examination of this witness for the same reasons as those assigned as an objection to the examination being held before the recorder.)

Answer. I did.

Question. Did the tally list contain the true state of the vote that was cast, counted, and tallied for the State ticket in that division?

Answer. I think it did.

Question. State the mode of counting off, making up, and tallying the vote by the officers after the polls closed.

Answer. The judge and the other inspector and myself opened the tickets and selected them; put the full tickets in one pile and the scratched or slip tickets (stickers) in another; then the full tickets were counted in tens first, by each inspector, and handed to the judge; he examined them, and twisted them up into a bundle of ten; they were laid on the side of the table until we were done counting the ticket; they were put into the ballot-box—I believe in the one we took them out of; they were tallied in tens, I believe—that is, the full tickets. The scratched ones were counted and read off separately. I can't say whether they were tallied as they were counted off, because I don't know that they amounted to ten. If they amounted to ten they were tallied and marked with X's; but I don't think there were ten scratched tickets. I don't know; I am not positive; I speak now of member of Congress.

Question. Are you quite sure that before you began to count into bundles of ten, that all the scratched or slip tickets were separated from the full tickets?

Answer. If they were not, when we opened them, if there was any slip ticket, we could put it out on the pile; that is, understand me, when we opened the tickets a slip ticket might get astray; it might be opened and not taken notice of at that time. When we would pick them up and count them—that is, the full tickets—if we found one of the scratched tickets, we would put it out.

Question. Were there any scratched tickets put in and counted as making part of ten, with full tickets, making altogether "ten," in a bundle of ten?

Answer. To the best of my knowledge, there was not.

Question. Did you examine closely every ticket which went into a bundle of ten, purporting to be ten full tickets, to see that there was no scratched or slip ticket among the ten?

Answer. I examined them when I counted them. I did not twist the tickets up myself.

Question. Did you first put them up in tens, or your fellow-inspector?

Answer. I am not positive which counted first, whether it was me or the other inspector, Mr. Cossart.

Question. Are you quite sure, from the attention you gave, that no bundle of ten was passed by you and counted as ten full tickets, which contained one or two or three slips or stickers over Mr. Verree's name?

Answer. I think that I am positive of that.

Cross-examination by Mr. McCabe.

Question. How many officers were voted for at the election referred to by you, in October, 1860?

Answer. I cannot recollect the number.

Question. Were not the officers voted for governor, for Congress, for representatives, for recorder, for clerk of court of quarter sessions, for prothonotary of the district court, and for a coroner?

Answer. I think they were.

Question. Were there not twenty candidates voted for for those offices?

Answer. I don't recollect.

Question. About how many were there?

Answer. I can only recollect when they are named or called over.

Question. You have enumerated twenty; is that the most you remember?

Answer. Yes, sir.

Question. At what time of the night of the election did you begin to make a count of the votes?

Answer. As near as I can recollect, about half past eight o'clock at night.

Question. At what time, as near as you can recollect, did you terminate or conclude the count of the votes?

Answer. I can't say positively; but I think it was after 12 o'clock at night when we got through. I can't say how much after 12; I don't recollect.

Question. Was it half past 12 o'clock?

Answer. I don't recollect.

Question. Might it have been before 12?

Answer. It might have been, but I don't think it was.

Question. Was all that time spent in the count, or was there any interval of interruption?

Answer. All the time was spent in counting and in signing papers.

Question. Do you remember how many papers were signed?

Answer. I don't recollect the number exactly; but there were two sets of papers, such as tally lists and return of votes.

Question. How many papers were signed by you, in relation to the election for congress for instance?

Answer. I think there were two.

Question. And so in relation to all the other of the offices?

Answer. Yes sir.

Question. Would there not be four different papers, signed by you and the other inspector and judge in relation to each of the seven offices voted for, to wit: one tally list to be deposited in the box; another tally list to be sent to the prothonotary of the common pleas; one return vote to be deposited in the box; and one to be sent to the office of the prothonotary?

Answer. Yes sir.

Question. Would not each of those papers have to be signed by the two clerks also; making in all five persons who sign each paper?

(Objected to by Mr. Gilpin, as the law directs the mode in which the papers are to be signed and disposed of.)

Mr. McCabe modifies his question, and asks whether each of those papers were not signed that night by five persons, the judge, the two inspectors, and the two clerks?

Answer. I think they were all signed by all the officers inside, and there were five present.

Question. When the other inspector and judge were examining the

bundles of ten, (each bundle of ten) which had passed under your inspection, how were you occupied, and what were you doing?

Answer. When he was counting one ten I was picking up another. After I examined one bundle of ten I would hand it to the judge, and as he was engaged in examining it, I would be picking out another bundle of ten. I mean to say that each inspector and the judge examined every bundle of ten.

Question. Were you so careful in examining each bundle of ten that it was impossible that a sticker or two in a few of the bundles might escape you?

Answer. I think it would be impossible to escape the three of us.

Question. Would it be impossible for it to escape you?

Answer. I think it would be impossible. The slips were generally of a different color.

Question. How much time, as near as you can recollect, was consumed in sorting and counting the vote, independent of the time spent in signing the various papers you have referred to?

Answer. I don't recollect.

Question. Can you not approximate to the time?

Answer. No, sir.

Re-examination by Mr. Gilpin.

Question. Was not William H. White one of the clerks?

Answer. I think he was.

Question. Do you know whether he is living in the city?

Answer. I believe he is in Colonel Murphy's regiment away from the city.

Question. Where is Joseph B. Spayd, the other clerk?

Answer. He died the 7th of last October, I think.

Question. Can you state the vote given, counted, and tallied for Mr. Verree and Mr. Kline, respectively, for Congress, in that division?

(Objected to by Mr. McCabe, because it is not properly a re-examination of the witness upon any subject inquired of him in cross-examination.)

Mr. Gilpin states that he has the right to re-examine as to new matter; that he has never spoken to the witness until he was put on the stand, and don't know whether he can answer the question or not.)

Answer. I am not positive of the number of votes polled; I can't state it positively; I did know at one time.

Question. Who had the majority?

Answer. I think Verree had in our precinct.

Question. Can you state about how much his majority was?

Answer. I am not positive; it was a few votes.

Question. State whether, when I give you the official vote from the certified copy exhibit I—Verree, 182, Kline, 166—that your memory is so refreshed that you can speak from your memory, and say whether that was not the vote, and Mr. Verree had not 16 majority.

(Objected to by Mr. McCabe, first, as leading; secondly, as attempting to refresh the memory of the witness from reading off a paper the witness never saw; thirdly, because there is no evidence in relation to any such paper to establish its authenticity.)

Answer. I am not positive of that; I think it was somewhere near those figures.

Question. Did not the tally list signed C. A. E. by you, and deposited in the office, contain the true and correct vote for member of Congress?

Answer. I believe it did.

Re-cross-examination by Mr. McCabe.

Question. Had you any other means of knowing what number of votes had been cast for the respective candidates other than the tally list kept by the clerks? Was not your knowledge derived from that tally list?

Answer. It was from the two tally lists that the clerks kept.

Question. Did you yourself keep any memorandum of the count as the count progressed?

Answer. I did.

Question. Have you got it here?

Answer. No, sir; I have mislaid it; Mr. Monheimer had it at one time, I think; I don't think I ever got it back from him.

Question. How did you keep that memorandum, and at whose call did you memorize or tally the vote?

Answer. On a piece of paper; the two clerks called the vote off, to see that their own tally lists corresponded; and I took my memorandum from that; but we knew what the tickets were, and could tell from that.

Question. This memorandum which you say that you kept, was it not made at the end of the count, and from comparison made by the clerks of their tally lists; or wasn't your memorandum made at the end of the count?

Answer. My memorandum was made at the end of the count; when the tickets were twisted up together the judge would pick them up by tens, or perhaps I might do it, and put them into a box. When we saw that the clerks corresponded on their tally lists, then we took it from them, and that is the memorandum to which I refer.

Question. If any mistake had occurred in the tally lists, would not the correct result have been arrived at by re-counting the votes in the box?

Answer. They would when we took them to the alderman's office.

JAMES C. BAXTER.

Attest:

JOSEPH ENEU, *Recorder.*

John F. Cossart, trunkmaker, residing at No. 938 Rachel street, Philadelphia, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

Question. Were you an election officer in the 3d division of the 16th ward, in October, 1860?

(The same objections made by Mr. McCabe, for the same reasons as those assigned first.)

Answer. Yes, sir; I was an inspector, and of the same political party that supported Mr. Verree.

Question. State the mode of counting off, tallying, and returning the vote after the polls closed?

Answer. We first unfolded the tickets, laid them all out, and put all the scratched tickets by themselves; and then we commenced counting; I don't recollect exactly which ticket first; we counted the full ticket first; we counted them off in tens; three of us counted them; each one counted each bundle; and they were twisted up in bundles of tens and laid on one side; after we got done them all we counted the bundles to see how many tens there were; and then we counted the scratched tickets after we got through with the full tickets; the full tickets were counted in tens with an X; the scratched tickets were called off separately, each name separately from each ticket.

Question. Suppose a few full tickets remained over, but not enough to make a bundle of ten, how were they tallied on the tally list? Were they not called off separately, and tallied with single strokes to each candidate on the tally list, as the scratched tickets were afterwards?

(Objected to by Mr. McCabe.)

Answer. I believe, to the best of my knowledge, they were all put down separately, with a stroke to each candidate that got the vote.

Question. Did you examine and scrutinize closely every bundle of ten tickets which was twisted up as a bundle of ten full tickets to see and discover whether every one of the ten was a full ticket, and without any scratch or slip over the printed name of the member of Congress?

Answer. I did. I examined every ticket.

Question. Suppose there were seventeen bundles of ten, twisted up as full tickets, on which John P. Verree was running for Congress, can there have been slips with the name of John Kline pasted over the name of John P. Verree without your observing it at the time you had the ten tickets in your hand?

Answer. I don't think there could.

Question. Did you not sign your name to the two tally lists, and did not they contain a true and correct statement of the whole vote as it was cast, counted, and tallied for member of Congress?

Answer. I did sign my name to them. I believe they did contain a correct statement of the vote, to the best of my knowledge.

Question. Could there have been nine out of seventeen bundles,

counted and twisted up as full tickets, on which Mr. Verree was running, and yet some of those tickets, from one to three in each bundle, have a sticker or slip, with the name of John Kline, pasted over the name of John P. Verree?

Answer. I think it could.

Question. Could you possibly have passed under your inspection nine bundles out of seventeen as full tickets, when those nine bundles had stickers or slips on from one to three of the tickets of each bundle?

Answer. No, sir; I don't think I could.

Question. Was each bundle purporting to contain ten full tickets for John P. Verree counted and inspected separately by the judge and each of the inspectors?

(Objected to by Mr. McCabe.)

Answer. I believe they were.

Question. Did you inspect closely every bundle of ten full tickets, whether for the democratic candidates or the people's candidates?

Answer. Yes, sir.

Cross-examination by Mr. McCabe.

Question. At what time in the morning did you go to the election polls?

Answer. Between 7 and 8 o'clock I started from home.

Question. What time did you leave there at night?

Answer. That I don't recollect; but I recollect the time I went there.

Question. Had you been at the election polls all day?

Answer. I believe I had.

Question. Were all the other officers there during the whole day?

Answer. Yes, sir; I believe they were, to the best of my knowledge.

Question. Had you any dinner that day?

Answer. No, sir; I hadn't anything but what was provided by Mr. Murphy, the keeper of the house; that was before dinner, and it was what they call "lunch."

Question. Were refreshments of any other kind provided?

Answer. Not that I know of.

Question. Did you eat or drink nothing except what was eaten or drunk at the lunch you have mentioned?

Answer. I believe I had a drink whenever I felt like getting it, which was not very often.

Question. Was there drink in the room?

Answer. No, sir; only water.

Question. Were there any spirituous liquors in the room?

Answer. There were some brought in.

Question. Who brought them in?

Answer. Mr. Murphy brought them in.

Question. What kind of spirituous liquor?

Answer. That I don't recollect.

Question. Was this liquor in a bottle, or how was it?

Answer. It was brought in in glasses.

Question. Did the judge and other inspectors partake of these refreshments?

Answer. To the best of my knowledge, I believe they did.

Question. As far as you recollect, how often did you drink of this spirituous liquor?

Answer. I don't recollect.

Question. Could it have been ten times?

Answer. No; I don't think it could.

Question. As you say your recollection is not precise upon that point, might you not have drunk ten times and have forgotten it?

Answer. No, sir; I don't think I did.

Question. At what time did you lunch?

Answer. Well, I don't recollect; but it was somewhere between 9 and 11 o'clock.

Question. After that lunch did you eat nothing until your labors at the polls were closed?

Answer. Yes, sir; I had something else.

Question. What was that, and at what time?

Answer. It was pie and milk, but I can't say at what time; it was in the afternoon.

Question. Did all of the officers of election drink together, and the same number of times?

Answer. That I can't say.

Question. If either of the officers had not been drinking, do you not think you would remember that fact?

Answer. No; I don't know that I would.

Question. Can you state at what time of the evening or night you began to count off and tally the vote?

Answer. No, sir; I can't tell. I took no note of the time.

Question. After having been at the polls all day, without any interval of relaxation, did you not feel fatigued at the time when the vote began to be counted and tallied?

Answer. No, sir; not till after it was counted.

Question. Were any drinks called for during the time the count of the vote was progressing?

Answer. No, sir; I don't think there was.

Question. Might there not have been drinks called for which you do not recollect now?

Answer. No, sir; I don't think there were—not while we were counting.

Question. At what time did you complete the count, and how much time was consumed in it?

Answer. I don't recollect at what time at all; it is so long ago. I don't recollect what time we got done. I don't recollect how much time was consumed in the count.

Question. Who counted off the tickets and put them up in bundles?

Answer. The judge twisted them up into bundles. Mr. Monheimer was judge. He then counted them off before he twisted them.

Question. Who first of the inspectors arranged the tickets in bundles?

Answer. I think Mr. Baxter first counted them; then he turned them over to me, and I then returned them to the judge.

Question. During the time the judge was engaged in inspecting and counting the bundles you handed to him, as you say you think you did, what were you occupied in doing.

Answer. I was counting another bundle; about the time he was counting one I was counting another.

Question. Did not your connexion with each bundle cease when you handed it to the judge?

Answer. I believe it did.

Question. Was it before 12 o'clock at night or after 12 at night that you left the polls?

Answer. Well, I can't exactly say; about the time I made no note of.

Question. Cannot you ascertain the time by relation to what you did after leaving the polls?

Answer. No, sir; I can't.

Question. What did you do after leaving the polls?

Answer. I helped take the ballots to the alderman, and then went home to bed.

Question. Was there any one up in the house when you went home to bed?

Answer. No, sir; I don't think there was.

Question. What time elapsed from the time you left the polls until you went to bed?

Answer. I don't think it was over three-quarters of an hour.

Question. Did the clerks who tallied the vote drink during the day?

Answer. I think they did; I don't know whether it was spirituous or malt liquors.

Question. Were either of the clerks under the influence of liquor during that day?

Answer. No, sir; I don't think they were.

Question. Might not such have been the case without your now recollecting it?

Answer. No, sir; I don't think it could.

Re-examination by Mr. Gilpin.

Question. Was either the judge, or either of the inspectors, or either of the clerks so affected by liquor as to be observable by you?

Answer. No, sir.

Question by Mr. McCabe. In consequence of the fatigues which you experienced at the end of the day, was not the count of the vote conducted hurriedly in order to give the election officers an opportunity of going home?

(Mr. Gilpin objects to the unfair mode of incorporating in a question statements attributing them to the witness, and then predicating

a question upon such statements, which have not been made by the witness. He does not object to any pointed or leading question, but objects to this mode of examination.)

Answer. No, sir; I don't think it was.

JOHN F. COSSART.

Attest:

JOSEPH ENEU, *Recorder.*

Charles D. Knight, prothonotary of the court of common pleas, residing at No. 720 Sansom street, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Mr. McCabe objects to the examination of the witness, for the reasons assigned as an objection to this investigation being had before the recorder.

Mr. Gilpin hands to the recorder and asks him to annex exhibit I, being a certified copy of tally list of the 3d division of 16th ward, exhibit K, being the 3d division, or precinct, of the 11th ward, and exhibit L, being a certified copy of the tally list of the first precinct of the 19th ward.)

Question. Are you prothonotary of the court of common pleas?

Answer. I am.

Question. Mr. Knight, look at exhibit I. Is not that a duly certified copy of the tally list of the 3d division of the 16th ward, the original of which is now on file in the office? Look at exhibit K, and state whether it is not a certified copy of the tally list of the 3d division of the 11th ward, the original of which is now in the office. Look at exhibit L, and state whether it is not a certified copy of the tally list of the first precinct of the 19th ward, the original of which is now in the office.

Answer. They all are certified copies.

Cross-examination by Mr. Hirst.

Question. Have you not just now erased part, and what part of certified copies marked exhibits I, K, L?

Answer. By correcting my first answer I do not consider that any erasure has been made, being merely the crossing off the blank printed heading of the certificate.

Re-examined by Mr. Gilpin.

Question. Are not the papers beginning below the erased printing at the head, and omitting your certificate at the bottom, a full, true and correct copy of the tally lists of the said divisions remaining on file in your office?

Answer. They are.

CHAS. D. KNIGHT.

Attest:

JOSEPH ENEU, *Recorder.*

Benjamin Markley, coach trimmer, residing at No. 111 Dana street, Philadelphia, a witness produced and sworn, deposes and says :

Examination by Mr. Gilpin.

(Subject to the same objections as heretofore.)

Question. Were you one of the election officers in the 3d division of the 11th ward at the October election, 1861. If so, what officer?

Answer. I was judge of the election.

Question. State what political party you were elected by, the one that supported Mr. Kline or Mr. Verree?

Answer. I was elected by the party that supported and nominated Mr. Kline.

Question. State whether you recollect the vote cast, tallied and returned for Mr. Kline and for Mr. Verree, for member of Congress?

Answer. I do not think I should have known anything about it had I not seen a copy lately that I believe to be correct. I think we returned 151 votes for Verree and 141 for Kline, and then there were a couple for another candidate, whose name I don't now remember.

Question. State when the polls were closed how you counted and tallied the votes on the State ticket.

Answer. We opened the box on the table and opened the tickets, each one of the inspectors took up the tickets and counted ten—these were full tickets—and handed them to me and I counted them, and I then twisted them up : they were tallied in tens by the clerks, in two separate tally lists, one kept by each clerk.

Question. Did you, before counting, put the full tickets of the people's party in one pile, the full tickets of the democratic party in another pile, and the scratched or slip tickets in a third pile?

(Objected to as leading.)

Answer. We did.

Question. Were or were not the full tickets for each party, as long as there was enough to make up a bundle of ten, counted and tallied in bundles of ten?

(Objected to as leading.)

Answer. They were.

Question. When there was not enough full tickets left to make a bundle of ten, how were they tallied? Were they or were they not, these odd full tickets, called off separately, and a score of one (1) put on the tally list for each candidate voted for?

(Objected to by Mr. McCabe.)

Answer. I think they were.

Question. How were the scratched or slip tickets tallied? State whether or not they were each called off separately, and one vote scored on the tally list for each candidate voted for.

Answer. Well, I can't say about that exactly, now. Whether they were put on a slip of paper and put on the tally list afterwards, or whether they were put on right, I can't say.

Question. Among the scratched tickets for State officers, were there not some with the governor scratched, some with Congress scratched, and some with representatives scratched?

Answer. I can't remember about the governor, but I remember a good many parted tickets, or slips, for Congress; and I think there was some scratched tickets for the representatives.

Question. When you tallied or had tallied the scratched or slip tickets, whether on a slip of paper first, or the tally list first, did you or did you not call them off separately each name on the scratched ticket?

Answer. Yes, sir; I think we did it in that way.

Question. Did you or did you not put up the scratched tickets or slip tickets, or any part of them, in bundles of ten?

Answer. I think we did. I think they were put up in bundles of ten. I think I did so; it was my regular practice. One of the inspectors, after calling the names off, would hand the tickets to me, and I would put them in bundles of ten and look at them to see that they were right. I considered that my business.

Question. Do you or do you not mean to say that in a bundle of ten such scratched tickets, there would be ten votes for the same man for governor, ten votes for the same man for member of Congress, and ten votes for the same man for representative, or that a part of the ten votes for governor would be for one man and a part for another man, a part of the ten votes for Congress would be for one man and a part for another man, and so of the vote for representative in such bundle of ten scratched tickets?

Answer. Well, in the first place, we picked out those that there would be only one candidate scratched. Where there were more, they were laid back and read off all through.

Question. Did you file or cause to be filed the return of votes and a copy of the tally list in the prothonotary's office, on the morning after the election?

Answer. Yes. I handed in the return of votes and the tally list myself.

Question. Was the return of the votes and the tally list filed by you in the prothonotary's office a true and correct return and statement of the votes cast respectively for Mr. Verree and Mr. Kline for Congress?

Answer. That was my impression at the time.

Question. Had you any doubt of it at the time?

Answer. No, sir.

Cross-examination by Mr. Hirst.

Question. What paper was it which you say you looked at lately, which enabled you to state the vote for Mr. Verree and Mr. Kline?

Answer. It is a copy that I had saved from the regular return. The clerks made out the copy. They made out two copies; one I returned to the office, and the other I kept myself.

Question. Can you state the votes given at that election for any other candidates?

Answer. I do not think I can for any other candidate.

Question. Was that copy made by the clerk taken from the tally list?

Answer. Well, it agreed with them, and was taken from them, I suppose.

Question. The correctness of a tally list depends, does it not, upon the accuracy of the officer who calls off the vote, and of the clerks who record it?

Answer. Great deal depends there.

Question. Then, if the officer who calls out the vote makes a mistake, or if the clerks who record make a mistake, the tally lists would not accord with the ballots in the box, would they?

Answer. Certainly, if they gave them the wrong names, or they wouldn't record properly, it would be a mistake. They wouldn't agree, the tickets and the returns.

Question. Would not the contents of the ballot-box therefore be the true, correct, and absolutely certain state of the vote?

Answer. Certainly, if such a mistake had occurred.

Question. How many hours were you engaged after the polls closed in counting off the votes, and signing the papers?

Answer. Between four and five hours, I think it was.

Question. Was not the vote counted, and were not the papers signed for twenty officers or candidates, or over, at that election?

Answer. I don't recollect the number of candidates. I know there was a good many of them.

Question. Were the votes counted, and the necessary papers signed for all?

Answer. They were.

Question. You have heard, have you not, of the re-count of the vote for Congress which gave John P. Verree 141 votes, and you have stated that your count was 141 votes for Mr. Kline. Is it not possible that the vote was transposed by mistake of the clerks?

Answer. It is possible, but I don't know that it was.

Question. How often have you served as judge of an election?

Answer. Well, I can't begin to tell how often; but about fifteen years altogether, but not in succession. I have been judge and inspector.

Question. Is it not a common occurrence to find in the box tickets for members of Congress and representatives from adjoining districts?

Answer. I think it has occurred sometimes.

Question. Mr. W. D. Kelley was a candidate at the election you have spoken of for member of Congress from the 4th district, was he not?

Answer. I recollect he was a candidate; but I do not recollect that we had any of his tickets in our boxes.

Question. Had you any tickets in the box for George J. Hamilton, for Congress; if so, how many?

Answer. I think we had two.

Re-examination by Mr. Gilpin.

Question. Where is the paper or memorandum of which you have spoken?

Answer. It is at home at my house.

Question. Will you do us the favor to bring that paper or memorandum with you at 12 o'clock to-morrow, to this office, when the commissioner meets to proceed with the examination?

Answer. I will do it.

Question. Your opinion has been asked whether the re-count of a box will tell accurately the vote that has been cast for the candidate. If you thought that a box might have been reopened between the time of your sealing it up and three months afterwards, when it was opened and re-counted, would you have any faith in the accuracy of such re-count?

Answer. Do I understand, whether if I thought it had been reopened? If I thought it had been reopened I would have no faith in the accuracy of the re-count.

Question. Would not your faith in the accuracy of such a re-count depend in some measure on your knowledge of the custody of, and what care had been taken of the box during those three months?

Answer. I had no thought of any danger of the place where we deposited them, nor I haven't yet, or we wouldn't have taken them there; but I don't know that they were there during the three months.

Question. If you doubted the custody or care of a box for a period of three months, would you have any faith in a re-count of its contents at the end of the three months?

Answer. I don't think I should if I had doubts; but I had no cause for doubts there.

Question. Have you ever seen the box in which the ballots were enclosed for State officers by the election officers, and sealed up in October, 1860, since that election night?

Answer. I haven't. I know I haven't.

Question. You did not, then, see the box before it was opened at Alderman Remick's office?

Answer. No, sir.

Question. Was your attention, or the attention of any of your fellow election officers, called, to the best of your knowledge, by Mr. Kline, or any one acting for him, to the condition of the box at or about the time of its opening at Alderman Remick's office, that you or they might be able to say whether it was in the same condition in all respects, externally, as when you sealed it up?

Answer. I can answer for nobody but myself. I was not there. I was not called upon. I know nothing about it.

Question. Have you now any doubt, or any reason to doubt, the accuracy of the vote cast, counted, tallied, and returned by the election officers in October, 1860, for State officers?

Answer. If there hadn't have been a re-count, I never should have had a doubt.

Question. I suppose you understood my last question as applying to the 3d division of the 11th ward.

Answer. Certainly.

BENJ. MARKLEY.

Attest :

JOSEPH ENEU, *Recorder.*

Joseph J. Gillingham, iron merchant, residing at No. 113 Laurel street, Philadelphia, a witness produced and affirmed, deposes and says:

Examination by Mr. Gilpin.

(Mr. McCabe objecting, for the reasons heretofore assigned.)

I was subpœnaed by Mr. Gilpin to attend as a witness. I served all the notices marked B, C, D, F, G, and H. The notice marked E was handed to my brother, George Gillingham, for delivery. I also served the subpœna on most of the witnesses.

JOSEPH J. GILLINGHAM,

Attest:

JOSEPH ENEU, *Recorder.*

Adjourned to meet on Wednesday, December 18, 1861.

WEDNESDAY, *December* 18, 1861.

Present, Charles Gilpin, esq., of counsel for John P. Verree, esq.; Edward McCabe, esq., and W. L. Hirst, esq., of counsel for the contestant, and by the contestant in person.

Thomas E. Little, manufacturer, residing at No. 134 Green street, Philadelphia, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Subject to the same exceptions as heretofore assigned by the counsel for contestant.)

Mr. Gilpin states that Thomas E. Little was the same witness examined January 26, 1861, as to whom ten days' notice could not be given then by the contestant.

Question. Did you act and assist at the election in October, 1860, in the third division of the eleventh ward; and if yea, in what capacity?

Answer. I did act as clerk of that election.

Question. State whether, after the closing of the polls, and the counting and the tallying of the vote was proceeding, tally lists were kept; and if so, by whom.

Answer. There was one kept by Mr. Vickery, the other clerk, and one by myself.

Question. State whether or not the vote of each candidate on the State and county ticket was truly and correctly entered on the tally list kept by you as the vote was called off.

Answer. The amount of votes was entered by us on the tally list correctly, as they were called off to us by the judge, Mr. Markley.

Question. State whether the tally list kept by you was compared

with the tally list kept by Mr. Vickery after they were both completed, and whether they corresponded exactly, or otherwise.

Answer. I think they were so compared, and think that they corresponded, as it has always been a practice with me, as a clerk of elections, so to compare my tally list with that of the other clerk.

Question. Were two division returns prepared also? If they were, state what was done with them and with the tally lists.

Answer. There were two sets of division returns made out—one by myself and the other by Mr. Vickery. One set was placed in the box, and the other was folded in brown paper, with one of the tally lists, and directed by myself to the prothonotary of the court of common pleas. The other tally list was placed in the box.

Question. State whether the division returns were made out from and corresponded with the tally lists.

Answer. They were so made out, and did correspond.

Question. Did not each inspector select his own clerk, and were not all the officers and clerks regularly sworn in?

Answer. I was selected as clerk by the inspector of the people's party, and think Mr. Vickery was selected by Mr. Beggs, the democratic inspector. All the officers and clerks were regularly sworn in.

Question. Did not the duplicate division returns agree exactly in the vote given to each candidate?

Answer. They did so agree.

Question. Were the papers put in the box with the bundles of tickets, or in a separate and larger box?

Answer. I think they were put in a larger box than the boxes containing the ballots, labelled for that purpose by the city commissioner.

Question. State whether there were not three boxes provided—one larger one for the papers required to be deposited in the box, and two smaller ones—one for the State ticket, and one for the county ticket.

Answer. I think there were.

Question. Please state how, after the polls closed, and by whom, the tickets for State officers were counted.

Answer. After the polls closed and the tables were cleared, each box was emptied separately; the tickets were opened; the full tickets of each party were placed in separate piles by themselves; all the scratched tickets were placed in another pile by themselves. One of the inspectors then counted the full tickets off in tens, handed them to the other inspector, who also counted them, and handed them to the judge; he also counted them and twisted them up, and counted them into the box, and we, the clerks, tallied them as he counted them into the box.

Question. Was one of the piles of the full tickets completely counted and tallied before the other pile of full tickets was begun to be counted and tallied?

Answer. It was.

Question. State whether the scratched or slip tickets were counted after the full tickets had been counted and tallied in bundles of tens.

Answer. They were.

Question. Suppose a few full tickets, not amounting to ten, remained in one of the piles after the bundles of ten had been counted and tallied, how were those few remaining full tickets counted and tallied on the tally list? Was it by a numeral corresponding with their number, or was each of those full tickets called off separately, and each vote scored separately to each candidate who got a vote, on the tally list?

(Objected to by Mr. McCabe.)

Answer. After all the full bundles were tallied we had been in the habit of making a memorandum on a piece of paper of the number of bundles and the number of separate full tickets. We then got the number of the scratched tickets, placed it on our memorandum, added up the whole amount for each candidate, and then carried it out on the tally list in tens. Any odd tickets after the bundles of ten we tallied with a single stroke.

Question. How were the bundles of ten tallied?

Answer. They were tallied with a cross or an X.

Question. How were the scratched or slip tickets tallied on the tally list? Were they tallied with an X, or a separate scratch for each vote, as you say the odd full ones were?

Answer. The scratched tickets were not tallied separately, although counted separately; but the amount of scratched tickets was placed on our memorandum under the amount of the full tickets, and added together; after getting the aggregate amounts, we divided them into tens, and so tallied them on the tally lists—that is, divided the number by tens, and not the number of tickets, as the full tickets had been twisted in bundles of ten previously.

Question. Can you state, and if yea, state the vote cast, counted, tallied, and returned for Mr. Verree and Mr. Kline, respectively, for Congress, in October, 1860, in your division?

Answer. I think I remember the amount. I think Mr. Verree received 151 votes. I think Mr. Kline received 141 votes. I think that is it. I know the majority was ten for Mr. Verree; at least, I think so. I believe there was another candidate, but I can't tell how many he received.

Question. Look at exhibit K; suppose it to be a true, correct, and exact copy of one of the tally lists kept in your division, and then state whether the crosses or Xs, following the names of the candidates for Congress, do not represent the bundles of tens for each candidate, and the scratches of one which follows, do not each represent either one of the full tickets, (there not being enough to make up ten,) or one of the scratched tickets upon which such candidate had received a vote.

(Objected to by Mr. McCabe: first, in giving the witness the paper, and secondly, because the question is leading.)

Answer. Well, they certainly represent bundles of ten, (that is, the crosses or Xs,) and the scratches each represent a single vote, either full or scratched tickets.

Question. State whether the tally list kept by you was kept in the manner corresponding, in appearance with exhibit K.

Answer. If exhibit K is a true and correct copy, it was so kept, because we always kept them alike. After looking at exhibit K, I have some doubt whether we kept a memorandum of the votes on this occasion, or not, or whether we tallied the scratched tickets as they were read off. I have been in the habit of keeping a memorandum of the votes at an election, in the manner heretofore described by me ; but whether on this particular occasion, or not, I can't say.

Question. Had you any doubt, or have you any doubt, that the vote counted, tallied, and returned, respectively, for Mr. Verree, 151, for Mr. Kline, 141, was a correct count, and the true state of the vote cast for those candidates, respectively?

Answer. I had not a doubt, at the time when the vote was tallied, of its correctness, or I should certainly not have tallied it, until I was satisfied, by a re-count of the ballots, that it was a correct count.

Cross-examination by Mr. McCabe.

Question. Did you belong to the party that supported Mr. Verree, or the party that supported Mr. Kline?

Answer. I belonged to the party that supported Mr. Verree.

Question. You have spoken of the full tickets for each party being placed together, and the scratched tickets being placed together. Did you see those tickets, or did you handle them, any of them?

Answer. I saw the tickets ; cant say but what I helped to unfold them ; but did not attempt, nor was I allowed, as a clerk of the election, to count them.

Question. After they had been arranged as you have described, did you handle them or any of them?

Answer. After the tickets were placed in files, I had nothing more to do with them but to tally them.

Question. Are you positive that you took any part in sorting and arranging them into piles?

Answer. I am not positive that I did so on this occasion, although I have done so at times when it was late, and we have wanted to get through with it.

Question. When you speak of all the full tickets being arranged in two different piles, one of each party, and the scratched tickets in another pile, have you any personal knowledge as to whether those separate piles, purporting to be full tickets, really all contained full tickets, and whether the pile of scratched tickets was exclusively composed of scratched tickets?

Answer. I have no other knowledge than that they were placed in piles, and called full tickets and scratched tickets.

Question. Before examining the paper, exhibit K, handed to you by counsel for incumbent, you spoke of a memorandum upon which you entered the stray full tickets and the scratched, and after seeing that paper you expressed doubts as to whether you kept that memorandum on that occasion. Can you now state positively whether you kept such a memorandum?

Answer. I cannot state positively, from the fact of being a clerk

in that division a number of times, and almost at every election, I have changed the manner of keeping my tally list to correspond with the other clerk. I sometimes kept a memorandum and sometimes did not.

Question. If you had kept a memorandum upon that occasion, did you not transfer from the memorandum the amount of ten stray tickets on to the tally list, when you had got that number of scratched or stray tickets on the memorandum, in the shape of an X?

Answer. Mr. Markley, the judge, when counting the tickets in the box, gave us the amount of full bundles; we then, I think, tallied them on the tally list in tens by an X, and if I kept a memorandum on this occasion, after so tallying the whole number of bundles, I placed the amount of votes on the memorandum, with the odd votes that would not make a bundle of ten. The scratched tickets were then counted, placed on the memorandum and added up, and if there was more than ten, the amount was put on the tally list by a letter X, signifying ten. The odd tickets were then tallied by single scratches; that is, providing a memorandum was kept.

Question. Look at exhibit K, and say whether there are not opposite the names of both Kline and Verree, more than ten of what seem to be stray or scratched tickets which are not enumerated or counted by the figure X, but by separate numerals or strokes of one?

Answer. There is opposite each of the names more than ten numerals; I mean single strokes, each signifying one vote, and the fact of seeing them on the paper marked K first raised the doubt in my mind whether the memorandum was kept on this occasion; and, from the appearance of the numerals or single strokes, they look to me as if the separate tickets were read off to us, and so tallied.

Question. Have you, as yet, or had you when examined in chief, carefully looked at and scrutinized exhibit K, not merely as it relates to the count of votes for members of Congress, but on all other facts?

Answer. I did not scrutinize it only in relation to the matter now on examination.

Question. How, then, can you, entertaining the doubts that you have expressed as to a memorandum, and not having examined closely the paper, say that it is a true and correct copy?

(Question withdrawn.)

Question. You acted as clerk of Aldermen Mecke and Remick, and were present when the box was opened and re-counted for the 3d division of the 11th ward, were you not, and saw its condition?

Answer. I did so act. I saw the box opened, saw the tickets counted, and was much surprised at the condition they were in.

Question. Was not the box sealed tightly?

Answer. I think it was; did not look at it particularly.

Question. What do you mean when you say that you were surprised at the condition the tickets were in when the box was opened?

Answer. I was surprised to find a number of tickets with Mr. Kline's name pasted over that of Mr. Verree in the bundles when they were taken out of the box.

Question. Had you seen every ticket and examined every ticket

for Mr. Kline and Mr. Verree the night of the election in October, 1860?

Answer. Not each one separately. I saw them altogether on the table, and saw them placed into piles afterwards.

Question. Did you see each ticket individually upon the table the night when the election was closed, or as they were arranged upon the table in piles?

Answer. They were emptied out of the box, each ticket opened separately by the inspectors, the judge, and I don't know but what the clerks helped. They were then placed in piles, as heretofore described, the whole of which transaction I saw.

Question. If you did not see the tickets separately, how do you know how many tickets had Mr. Kline's name pasted over Mr. Verree's?

Answer. I don't know how many, and never said I knew?

Question. Did you not say you were surprised to find a number of tickets with Mr. Kline's name pasted over Mr. Verree's in the bundles when they were taken out of the box?

Answer. I did say so.

Question. If you did not know the number of tickets which had Mr. Kline's name pasted over Mr. Verree's, what occasion had you for surprise at the re-count?

Answer. I was surprised to find those tickets with Mr. Kline's name pasted over that of Mr. Verree's in the bundles of ten, as it has always been the practice of the election officers of the third division of eleventh ward, as far as my knowledge goes, to place the scratched tickets in a separate bundle by themselves in the box.

Question by Mr. Hirst. Did you observe anything with regard to the condition of the box or the tickets except what you have stated?

Answer. I observed that when they were counted the amount did not agree with the amount that had been returned for Mr. Kline and Mr. Verree.

Question. Anything else?

Answer. I don't know of anything else that I noticed at the time.

Question. Then, with the exception you have stated, you saw nothing in the condition of the box or the tickets different from the condition they were left in on the night of the election?

Answer. Not having taken any special notice of the box on the night of the election, either as to the way it was sealed up or tied with tape, I did not pay any attention to the appearance of the box when it was opened before Aldermen Remick and Mecke.

Question. In how many of the bundles of ten did you see the pasters which you say surprised you?

Answer. That I don't know.

Question. More than one?

Answer. I think so.

Question. More than two?

Answer. At the time that these bundles were being opened I was busily engaged in tallying the vote as it was called off by Alderman Remick, who read off the vote on that occasion; and as to the number

of bundles, I cannot say positively whether it was more than one or less than ten, or less than the whole number, and they may have all been contained in less than five of the bundles. I am not positive how many.

Question. You say that you cannot tell how many bundles contained the pasters you speak of. Can you tell how many pasters were in all or either of the bundles of ten?

Answer. I cannot.

Question. More than one?

Answer. I can't say.

Question. Did you express surprise at the time; and if so, to whom?

Answer. Well, I think I expressed my surprise there publicly at the time.

Question. In whose hearing?

Answer. It was in the hearing of all those present, or who might have been around the desk at the time.

Question. The re-count showed 141 votes for Mr. Verree, and your returns showed 141 votes for Mr. Kline. Is a transposition of votes in election papers an unusual occurrence?

Answer. I never heard of one in our precinct, nor do I know of any that ever occurred by my knowledge; neither do I think it was so in this case, from the fact that the aggregate amount of the votes counted for member of Congress at the re-count does not agree with the aggregate amount of votes returned for member of Congress on the night of the election.

Question. What is the difference between the two?

Answer. A difference of one vote.

Question. How many votes were polled at the election?

Answer. 294 for member of Congress. I don't know how many votes were polled for the full ticket. We returned 294 for member of Congress.

Question. How often have you been an officer of election?

Answer. At each succeeding election since May, 1858. I think that is the first time that I was in.

Question. Have you never made a mistake?

Answer. Not to my knowledge—that is myself.

THOS. E. LITTLE.

Attest:

JOSEPH ENEU, *Recorder*.

Benjamin Markley recalled:

Question by Mr. Gilpin. Have you with you paper or memorandum spoken of by you yesterday? If you have, please produce it.

Answer. This is the paper.

(Mr. Gilpin asks to have this paper annexed as an exhibit, and which is accordingly hereto annexed, marked M.)

Question. Is signature "B. Markley" in your proper handwriting, and when was it put there?

Answer. It is my handwriting, and was put there on the night of the election. No other part of it is in my handwriting.

BENJ. MARKLEY.

Attest:

JOSEPH ENEU, *Recorder*.

William Beggs, wheelwright, residing at No. 1126 Christian street, a witness produced and sworn, deposes and says :

Examination by Mr. Gilpin.

(Subject to the same exceptions as heretofore.)

Question. State whether you were an election officer in the 3d division of the 11th ward at the election of October, 1860.

Answer. I was one of the inspectors.

Question. State of what political party.

Answer. Of the democratic party.

Question. Who was your clerk?

Answer. David Vickery.

Question. State, after the polls were closed, how you handled the tickets, assorted them, counted them, and tallied and returned the vote. Give a full description of the mode of doing it.

Answer. The contents of both boxes were emptied on a table, (the boxes were for State and county officers,) and the full tickets of Mr. Kline and Mr. Verree were put in separate piles, and the scratched tickets in another pile. The full tickets were counted first, in tens, and then handed to the judge; then the scratched tickets were counted and deposited in the box. They were counted by the judges, however, before deposited in the box.

Question. Were all the full tickets of ten counted and tallied before the scratched tickets were counted and tallied?

Answer. I believe they were.

Question. Did you scrutinize every bundle of ten full tickets closely, so that you could ascertain they were all full tickets?

Answer. I did.

Question. Was there any paster or sticker on any one of the tickets making a bundle of ten full tickets?

Answer. I believe not.

Question. After the full bundles were counted and tallied, did you not proceed to count the odd full tickets, not making a bundle of ten, and the scratched or slip tickets?

Answer. I did.

Question. Did every bundle of ten pass through your hands, and did you examine every ticket in each bundle?

Answer. Yes, sir.

Question. State whether the duplicate tally lists and the duplicate return of votes for member of Congress, signed by the officers that night, did not contain a correct and true count and the exact state of the vote cast for member of Congress?

Answer. Yes.

Cross-examination by Mr. McCabe.

Question. After you had inspected each bundle of ten, to whom did you hand it, to the inspector or to the judge?

Answer. I handed it to the judge.

Question. During the time the judge was occupied in examining the bundle what were you engaged in doing?

Answer. Counting another bundle to hand to him, the judge.

Question. Did you see the clerks as they tallied each bundle—what they were writing?

Answer. No, sir. The judge called to the clerks the amount, as I was counting, and they wrote down what the judge called off. I did not see what the clerks were writing.

Question. Do you know whether they correctly tallied in every instance?

Answer. After the number of votes were given, the amount they had down in numbers agreed with the number of votes in the box.

Question. Do you know of your own personal knowledge whether the tally list corresponded exactly with the number of votes that was called out for each candidate?

Answer. Yes, sir.

Question. As you did not see the clerks writing, can you say positively whether the tally list contained an exact account of the votes cast for each candidate?

Answer. Yes, sir.

Question. If you did not see the clerks as they were writing down, how can you tell that each candidate received the number of votes called out for him?

Answer. By looking at what they had put down afterwards.

Question. Might there not have been a mistake in the count, either as it was called off by the judge, or as it was written down by the clerks?

Answer. I believe there was no mistake. I don't think there could have been a mistake.

Question. Were there any spirituous liquors used in the room that you occupied that day?

Answer. Yes, sir.

Question. Was there much used?

Answer. None to excess.

Question. How much would you call excess?

Answer. Enough to make a person drunk.

Question. How many glasses do you suppose each person drank in that room that day?

Answer. That I don't know.

Question. At what time did you begin to count off the vote, and at what time did you close?

Answer. We began to count off the vote about a quarter after 8 o'clock; I judge we closed between 11 and 12 o'clock at night.

Question. How much of that time was spent in the count before you began to sign the papers—tally lists and returns?

Answer. I should judge about three hours.

WILLIAM BEGGS.

Attest:

JOSEPH ENEU, *Recorder.*

David Vickery, painter, residing at No. 831 St. John street, Philadelphia, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Subject to the exceptions heretofore assigned by the contestant.)

Question. Were you clerk in the 3d division of the eleventh ward, at the October election, 1860?

Answer. I was.

Question. Look at exhibit M, and state whether all the written part, except the signature "B. Markley," is in your handwriting.

Answer. It is.

Question. When was it made out?

Answer. The night of the 9th of October, 1860.

Question. Does this paper contain the true state of the vote cast, and a true statement of the vote counted and tallied for member of Congress, namely: John Kline, 141; John P. Verree, 151; George J. Hamilton, 2, on that day?

Answer. I believe it does.

Question. Did you keep a tally list?

Answer. I did.

Question. Did you correctly and truly tally every vote, first in bundles of ten, and afterwards the single votes and scratched tickets, as they were called off?

Answer. I tallied as they were called out by the judge, according to his call, correctly and truly.

Question. Did your tally list correspond with that kept by the other clerk?

Answer. It did. We compared them, and they corresponded.

Question. You have heard it stated here by the officers of the division how the tickets were separated and counted off; state generally whether they have correctly described it, or particularly, if you desire.

Answer. It was done as stated by Mr. Markley, Mr. Beggs, and Mr. Little.

Question. Have you any doubt of the correctness of the vote shown by the tally lists and the return of votes, or of its agreement with the tickets that were counted and afterwards sealed up in the box?

Answer. I have none.

Cross-examination by Mr. McCabe.

Question. Did you take any part in arranging and assorting the tickets in piles?

Answer. When the box was emptied on the table, I helped to open the tickets and sort them into different piles between the candidates.

Question. If there had been a mistake in the calling out of the vote by the judge, or in tallying by the clerks, would not a re-count afterwards of the ballots in the box be a correct index to the number of votes cast?

Answer. I think it would.

Re-examined by Mr. Gilpin.

Question. Is not the opinion expressed by you, in your answer to the last question, given on the supposition that the box had not been meddled with, or its contents disturbed during the three months before the re-count took place?

Answer. I don't know that the box had been disturbed.

Question. Your opinion is based on that supposition, is it not, that the box had not been disturbed?

Answer. Yes, sir, it is.

DAVID VICKERY.

Attest :

JOSEPH ENEU, *Recorder.*

Jeremiah Robinson, blacksmith, residing at No. 527 North Front street, now residing at Fraley's court, above Allen street, Philadelphia, a witness produced and sworn, deposes and says :

Examination by Mr. Gilpin.

(Subject to the objections heretofore assigned by the counsel for the contestant.)

Question. You were one of the inspectors in October, 1860, in the 3d division of the eleventh ward?

Answer. I was.

Question. Of which party?

Answer. Of the people's party.

Question. Have you heard Mr. Beggs, Mr. Little, and Mr. Vickery describe the mode of counting off and tallying the vote?

Answer. I have.

Question. Does their testimony correspond with your knowledge of the mode in which it was done?

Answer. It does.

Question. State whether you examined closely every ticket making up a bundle of ten full tickets as the bundle passed through your hands.

Answer. I did.

Question. Can you speak positively whether any one of the bundles of ten counted for Mr. Verree had in it a ticket with one or more slips for Mr. Kline?

Answer. I cannot speak positively as to that.

Question. Did you examine closely every bundle of ten full tickets for Mr. Verree before they were rolled into bundles of ten?

Answer. Well, I did not examine them very closely. I just looked over them to see whether they were Verree tickets.

Question. Did you scrutinize them sufficiently to know that they were all Verree tickets?

Answer. I did.

Question. Can you state the vote returned for Mr. Verree and for Mr. Kline, respectively?

Answer. I can't state positively from memory.

Question. Did not all the officers and clerks sign the tally lists and return of votes?

Answer. They did.

Question. Did not the vote correspond in each?

Answer. They did.

Question. Have you any doubt that the vote so counted, tallied, and returned for member of Congress was the true vote and a correct statement of the vote as shown by the tickets which were afterwards sealed up in the ballot-box?

Answer. I have no doubt.

Cross-examination by Mr. McCabe.

Question. After you had looked at the separate bundles of ten, to whom did you hand them?

Answer. To Mr. Beggs, the other inspector, and he handed them to the judge.

Question. During the time that Mr. Beggs and the judge were looking at these bundles, and the judge was calling out the tally, what were you occupied in doing?

Answer. Assorting out the tickets, sir, into other bundles.

Question. Was not your attention, during such interval, engaged in and occupied with the arrangement of other bundles?

Answer. No, sir; I sorted out one bundle at a time.

Question. While the judge and inspector were looking at the bundle you had presented, was not your attention engaged in the arrangement and sorting of another bundle?

Answer. It was.

JEREMIAH ROBINSON.

Attest:

JOSEPH ENEU, *Recorder.*

Adjourned to meet on Thursday, December 19, 1861.

THURSDAY, December 19, 1861.

Present: Charles Gilpin, esq., of counsel for the incumbent; John Kline, esq., contestant, and his counsel, Edward McCabe and W. L. Hirst, esqrs.; John P. Verree, incumbent.

Albert E. Eldridge, house carpenter, residing at 2016 North Fifth street, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Subject to the objections heretofore assigned by the counsel for contestant.)

Question. Who was judge of the first precinct of the nineteenth ward at the October election of 1860?

Answer. I was.

Question. Were you of the people's or of the democratic party?

Answer. Of the people's party.

Question. Who was your clerk?

Answer. Thomas Haig, jr.

Question. State particularly, and in detail, the mode, after the polls were closed, of counting off, tallying, and returning the vote for the candidates, especially for member of Congress?

Answer. As soon as the polls were closed we proceeded to count off the vote cast. We took the box, especially for State officers, and we emptied the whole contents out on the table; myself and the two inspectors opened all the tickets, and the tickets (full tickets) for Mr. Verree were placed in one pile by themselves, and the full democratic tickets were placed in another pile by themselves, and the scratched tickets were placed in a pile by themselves, the democratic and the people's all together. The first that was taken up after they were separated was the people's full ticket, with Mr. Verree's name on it. Mr. McGinley, the democratic inspector, took them up first and counted a pile of ten, and he handed them to the opposite inspector, Mr. Mason, and he counted them, and then they were handed to me, as judge, and I counted them and announced them to the clerks. I first twisted them up in bundles of ten and then announced them to the clerks; and we went through the whole people's ticket in that manner.

Question. Suppose there were odd people's tickets, (being full tickets,) not amounting to a bundle of ten; state how they were tallied or announced by you.

Answer. If there had been four people's tickets I should have said four for Mr. Verree; how the clerks tallied them, I don't know. The full democratic ticket was counted and called off the same way the people's ticket was.

Question. How did you call and announce the scratched or slip tickets?

Answer. Mr. McGinley, the democratic inspector, took up the scratched tickets, one by one, and handed them to me as the judge, and I announced them to the clerks, one ticket at a time, calling each name off separately, Mr. McGinley looking over my shoulder to see that I announced them right.

Question. Have you any doubt that the vote counted and returned for the several candidates for Congress, or for Mr. Verree and Mr. Kline, was correctly counted and returned?

Answer. I have no doubt whatever that the count was correct.

Question. Was one return of votes and one tally list filed in the office of the prothonotary?

Answer. Yes, sir; I filed them myself; I took them to the prothonotary.

Question. Did the return of votes and the tally lists so filed contain a correct and true statement of the vote for Congress, as cast and counted for Mr. Verree and Mr. Kline?

Answer. To the best of my knowledge, it was. It was not questioned by any of the officers of the election.

Question. Did you seal the tickets after they were counted up in a box?

Answer. Yes, sir; I did.

Question. Can you state at this time, from memory or from memorandum, the vote counted and returned for member of Congress?

Answer. Well, I couldn't say that I could state the whole vote correctly, but I could state the vote for Mr. Verree and Mr. Kline from memory merely.

Question. State the vote.

Answer. Well, from the best of my knowledge, Mr. Kline's vote was 222, and Mr. Verree's 321; there was a candidate running named Hamilton; I think his vote was 4; and there were votes cast, one for E. Joy Morris, and two or three, I won't be certain which, for W. D. Kelley.

Question. State whether the bundles of ten, or the scratched tickets, were put into the box first in counting off before sealing up.

Answer. The bundles were put in first.

Question. State whether the scratched tickets were put in loosely or in bundles.

Answer. They were just put in promiscuously. They were just thrown in on the top of the bundles thrown in first.

Question. How came it that the votes given for Kelley and for Morris were not entered on your return?

(Objection to the question being interposed, the question is withdrawn for the present.)

Question. Were the votes for Kelley and Morris returned or not on the tally list or the return of votes?

Answer. Well, I am not positive about it, either one way or the other, as they did not amount to anything in our district. I think they were not counted.

Question. Why?

Answer. Because Mr. Morris was a candidate in the second district, and Mr. Kelley was a candidate in the fourth district.

Question. Why did you return Mr. Hamilton's vote of 4?

Answer. He was a candidate for Congress in the district.

Cross-examined by Mr. McCabe.

Question. Did you and the other election officers of the first division of the nineteenth ward sign the tally list, or either, and which of them?

Answer. I won't be positive; I think the clerks merely. It has been the usual custom there. I don't know whether they did it or not.

Question. After the vote was counted did you sign any papers whatever, and what papers?

Answer. I signed the return of votes.

Question. Did you examine the tally list which you handed to the prothonotary of the common pleas; and if so, did you observe any signatures thereon?

Answer. Well, I won't be positive about examining it for the signatures. I think by examining it you will find the clerk's name to it.

Question. Did the tally list which you handed to the prothonotary of the common pleas contain any indication of the division and ward of which it purported to be a tally list of votes cast therein?

Answer. I suppose it did, sir.

Question. If so, what was written thereon to show that it was a tally list of the votes cast in the first division of the nineteenth ward?

Answer. I cannot say what was written on it to indicate the precinct and ward it came from.

Re-examination by Mr. Gilpin.

Question. Was not the tally list filed by you in the prothonotary's office in a bundle with the return of votes, the list of voters, and other papers required to be filed there by law? If so, state whether the bundle was sealed up or tied up when you filed it.

Answer. The tally list was filed with the rest of the papers, tied up.

Question. State whether the vote on the tally list for member of Congress agreed with the vote on the return of votes filed with it.

Answer. They corresponded together. I saw no difference in them.

ALBERT E. ELDRIDGE.

Attest:

JOSEPH ENEU, *Recorder.*

Thomas Haig, jr., potter, residing in Dauphin street, east of Frankford road, formerly residing in 6th street, above Montgomery, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Subject to the objections heretofore assigned by counsel for contestant.)

Question. Were you an officer, and what officer, of the election in October, 1860, in the first division of the 19th ward?

Answer. I was clerk; appointed by Inspector Mason, of the people's party. I was of the people's party.

Question. State how the vote was counted off, tallied, and returned after the polls were closed.

Answer. After the polls were closed, the contents of the box for State officers were emptied out in a mass on a table. The people's tickets (the full tickets) were sorted out, and placed by themselves in piles; the democratic ticket was disposed of in the same way; the scratched tickets of both parties were placed in a pile. The people's tickets were then counted first. The democratic inspector, McGinley, took the people's tickets, ten full tickets at a time, and being satisfied that the ten were correct, he handed them to Mason, the other inspector; he also finding them correct, handed them to the judge, Mr. Eldridge, who announced to the clerks ten full people's tickets, twisted them in a bundle of ten, laid the bundle on the table; in this way the people's tickets were all disposed of, in the same manner as the first bundle. When they were gone through with, the judge counted the bundles as they lay on the table, and asked the clerks if their tens agreed with the number of bundles that they had tallied; they did agree, and those tens were put in the box; that ended the full row of tens on the tally proper for the people's ticket. The same process precisely was gone through with for the full democratic tickets. The scratched or slip tickets with pasters were then taken up, one at a time, by Mr. McGinley; he handed them to Mason and the judge, one at a time; Mr. McGinley standing at that time by the judge; he was standing by the judge all the time that the scratched ticket was being called off. Sometimes "Governor" was scratched, and sometimes for Congress.

Question. Who tallied the bundles of tens of the scratched tickets as they were called off?

Answer. The clerks did, of course—Mr. Osborn and myself; we each kept tally lists. Mr. Osborn was appointed by McGinley, and was of the democratic party.

Question. After you were done counting off and tallying on the tally lists, did the clerks compare the tally lists and ascertain whether they agreed with each other?

Answer. Yes, sir; they did.

Question. State whether there were two returns of votes for State officers made out?

Answer. Yes, sir; there were two sets of papers.

Question. State whether the votes in the return of votes corresponded with the votes on the tally list?

Answer. Yes; they did.

Question. What was done with the two returns of votes and the two tally lists?

Answer. One set was put in the box, and the other set went to the prothonotary's office.

Question. State whether you have any recollection of any scattering votes for member of Congress cast for persons not running for

Congress in that district? if so, how many such scattering votes, and whether they were put on the return of votes or the tally lists?

Answer. I do remember four being cast, viz: three for Mr. Kelley and one for E. Joy Morris. They were not put on the papers, because those gentlemen were not running in that district. I know the persons that voted them, and how they came to vote them.

Question. Can you state from memory the vote tallied and returned for Congress for Mr. Verree, for Mr. Kline, and for Mr. Hamilton? If so, state it.

Answer. Mr. Verree had 321; Mr. Kline had 99 less, just Mr. Verree's majority; Mr. Kline had 222; Mr. Hamilton had 4.

Question. Have you any doubt that those figures represent exactly and truly the vote cast, tallied, and returned for those three persons?

Answer. I believe, sir, that that is a candid, just, and true account.

Question. Does that vote and the scattering tickets for Kelley and Morris represent the tickets and the vote on them as they were sealed up by the officers after the counting, tallying, and returning was over? I mean the vote cast for member of Congress.

Answer. Yes; they do.

Cross-examination by Mr. Hirst.

Question. The returns of votes were taken from the tally lists, were they not?

Answer. Yes, sir.

Question. If the tally lists were wrong, then the returns would be wrong, would they not?

Answer. Yes, sir.

Question. Your tally lists represented the votes in the box, did they not?

Answer. Yes, sir, excepting the votes for Mr. Kelley and Mr. Morris.

Question. If there was a miscount of the votes, then, by the officers, the tally lists would be wrong, would they not?

Answer. The tally lists would have been wrong if all the officers had made a mistake. It is supposed that one would act as a check upon the other.

Question. Who called off the vote to the clerks?

Answer. The judge, Mr. Eldridge.

Question. Who recorded the votes on the tally lists?

Answer. Myself and Mr. Osborn, the clerks.

Question. Then if the judge made a mistake in calling off the vote, the tally list would be wrong, would it not?

Answer. It would, provided the two inspectors did not check him.

Question. If the clerks made a mistake in recording the vote, then the tally lists would be wrong, would they not?

Answer. It would be wrong; but it would be a matter of impossibility to make that mistake, because the two inspectors kept their own private account on a small slip of paper.

Question. As the judge and each inspector was counting a bundle of ten, would not the same officers each be counting another bundle?

Answer. The democratic inspector would hold a second bundle of ten in his hand. As soon as the judge called out to the clerks to mark the bundle of ten he had in his hand, Mr. McGinley would look at the ten in his hand, and hand it to Mr. Mason. Each time McGinley would always say to Mr. Mason, whose name is Alfred, "Al., is it all right?" "Are they all right?" or "Are there ten there?"

Question. Did not the ballot-box, after it was sealed up that night, contain the positive evidence of the state of the vote?

Answer. Yes; it contained all the tickets that were voted, scattering and all.

Question. How many hours were you engaged in counting the votes, preparing and signing the papers, after the polls closed?

Answer. I think we were through about 11½ o'clock at night. The polls closed at 8 o'clock, and we commenced to count at about twenty minutes after 8. We took supper before we commenced to count.

Question. Did you and Mr. Osborn, the other clerk, sign the tally lists?

Answer. No, sir.

Question. Did any officer of the election sign the tally lists?

Answer. No, sir.

Question. While you tallied were the inspectors and judge sitting at the table making up the bundles?

Answer. Yes, sir, except the judge; they made them in the manner I have described.

Question. Were the clerks at the opposite side of the table to that at which the inspectors sat?

Answer. I can explain how they sat. The judge sat at the head of the table, the two clerks sat at the opposite end, and one inspector on each side of the judge.

THOMAS HAIG, JR.

Attest :

JOSEPH ENEU, *Recorder*.

Mr. Gilpin offers in evidence, and asks to be annexed to the record, a certified copy of the list of voters of the third division of the 11th ward at the election held October 9, 1860, as the same is filed in the office of the prothonotary, which is accordingly hereto annexed, marked N.

Also a certified copy of a list of voters at the same election for the 3d division of the 16th ward, and asks to have it annexed, which is accordingly hereto annexed, and marked O.

Alfred Mason is offered as a witness. Mr. Gilpin states that the ten days' notice required to be given of Mr. Mason's examination does not expire until Monday, the 23d of December; that incumbent was not able to get his correct name and residence in time to give earlier notice. He now asks contestant and his counsel to waive that objection, and let him be examined to-day, as if ten days' notice had been given, otherwise his examination must be deferred until Monday next.

Mr. Mason was an inspector of the first division of the 19th ward.

The counsel for the contestant being disposed to accommodate the incumbent and his counsel, waives any objection to the witness on the score that the ten days' notice has not been given.

Alfred Mason, lampmaker, residing at the northeast corner of Sixth and Meetler streets, nineteenth ward, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Subject to the objections already assigned by the counsel for contestant.)

Question. Were you an inspector of the first division of the nineteenth ward at the October election, in 1860, and of the people's party?

Answer. Yes, sir.

Question. State, after the polls were closed, how the vote was counted off, tallied, and returned.

Answer. After the polls were closed, we, generally speaking, in our division, make it a rule for one to count first, and then the other; that is to say, first one inspector, and then the other. After the polls were closed, all the tickets were emptied out on the table at once, and the State ticket, the governor and congressional ticket, which was all in one, as well as the representative ticket. The governor's ticket was counted first. I mean the whole State ticket was counted first. The tickets were all selected, and put into separate piles. In counting them, the people's party being the highest in that division, it was always determined to count it first; the scratched tickets were put separately by themselves; the full people's ticket in one pile; the full democratic ticket in another pile, and the scratched tickets in another pile. Mr. McGinley, the democratic inspector, counted in tens first, and then handed them to me, and I counted them afterwards; and I handed them to the judge, and he counted them. Then they were twisted and laid on one side; then they were called out by the judge, and the clerks placed them on the tally lists; and, after they were all counted, the democratic inspector counted them himself. They were handed to him last, and then placed in the box. The same thing was done with the pile of the democratic tickets. The scratched tickets of the people's party were counted first, as usual; the democratic inspector called them off separately, and then handed them to me. I gave them to the judge; he counted the scratched tickets, and called each ticket off separately, and then the clerks tallied them.

Question. Did each one of the inspectors and judge count all the tickets in the manner you have described before the judge called them off, and have them tallied on the tally lists?

Answer. Yes, sir.

Question. After the counting was done, state whether the tally lists of the two clerks agreed.

Answer. They did. I examined them to see that they did agree.

Question. Were there any scattering tickets for persons not run-

ning for Congress in that district—I mean other than Messrs. Verree, Kline, and Hamilton? If so, how many, and for whom?

Answer. To the best of my knowledge, I believe there were five for Mr. Kelley. I do not remember any more.

Question. Can you state whether there was any for E. Joy Morris?

Answer. To the best of my knowledge, I believe not.

Question. Neither Mr. Kelley nor Mr. Morris were running in that district for Congress?

Answer. No, sir.

Question. Can you state the vote counted and returned for Mr. Verree, for Mr. Kline, and for Mr. Hamilton, for Congress?

Answer. Yes, sir; I can.

Question. State it.

Answer. I am unable to give anything more than the majority of Mr. Verree over Mr. Kline.

Question. State the majority.

Answer. It was 99 majority for Mr. Verree over Mr. Kline.

Question. Are you quite certain that the vote as counted and tallied on the tally list, and put on the return of votes, for Mr. Verree and for Mr. Kline, was the true and correct vote cast for them in that division?

Answer. Yes, sir.

Question. Have you any doubt whatever about it.

Answer. Not the least doubt at all.

Question. State whether when you put the tickets into the box to seal them up, the full bundles of ten were not put on the bottom of the box first, and the single tickets put loose on the top of them, before the lid was slid on?

Answer. The tens were all put into the bottom of the box first, and then those scratched tickets were twisted together and laid on top and all together. I helped to do it myself.

Question. Do you remember whether these tickets laid on top were put at the back end or the front end of the box where the lid first slid in?

Answer. They were the nighest to the back part of the box.

Cross-examination by Mr. McCabe.

Question. During the time the count was going on, and the judge was calling out to the clerks, did you keep any memorandum?

Answer. No, sir; I kept none.

ALFRED MASON.

Attest:

JOSEPH ENEU, *Recorder.*

Adjourned to meet Friday, December 20, 1861.

FRIDAY, *December 20, 1861.*

Parties present, to wit: John P. Verree, esq., incumbent, and John Kline, esq., contestant, and their counsel—Charles Gilpin, esq., for incumbent; Edward McCabe and William L. Hirst, esqrs., for contestant.

Samuel L. McKinney, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin,

(Subject to the exceptions heretofore assigned by the counsel for the contestant.)

Question. State whether you are in the military service of the United States ; if yea, the regiment and company, and where it is located.

Answer. I am in the military service ; company B, in what was formerly called the 2d Reserves, Pennsylvania volunteers, now the 32d regiment Pennsylvania volunteers ; Camp Pierpont, Virginia.

Question. Where does your family reside in your absence ?

Answer. My family resides at 156 Wilmer street, eleventh ward, between New Market and Second, and Vine and Callowhill streets.

Question. State whether you are on a furlough, and when it expires ?

Answer. I am on a furlough ; it expires on Monday, the 23d of this month.

Question. Have you been subpoenaed as a witness before the recorder, by Mr. Verree or Mr. Kline, or by both ?

Answer. I have been subpoenaed, and by both parties.

Question. Who subpoenaed for Mr. Kline ?

Answer. Wm. C. Rice, who sits by me.

Question. State whether you were a constable in January, 1861, and of what ward.

Answer. I was a constable at that time in the eleventh ward, city of Philadelphia.

Question. By what party were you elected ?

Answer. By the democratic party.

Question. At what magistrate's office did you attend most ?

Answer. For the last year and a half, including the month of January, at Alderman George W. Williams's office.

Question. State whether you were present at the office of Alderman Williams when he first went with election boxes to the office of Alderman Remick, at the time testimony was being taken before Aldermen Remick and Mecke ?

Answer. I was, sir ; I accompanied him there.

Question. Who went in company ?

Answer. John Fromberger, I think, was along with us.

Question. What box or boxes were taken that day ?

Answer. There was a large box that was used for election papers, and a small box that was used for ballots or tickets, marked "State officers, 3d division, eleventh ward."

Question. Was the examination of witnesses going on at Alderman Remick's office, either when you arrived or while you remained there ?

Answer. Witnesses were being examined when we arrived there.

Question. Was Alderman Williams examined that day before the magistrates ?

Answer. He was not, sir.

Question. Did you afterwards, on a subsequent day, see him take a box and start for the office of Alderman Remick?

Answer. A person notified him in the morning to be at Alderman Remick's office, and to bring one small box. It was Mr. Kline who directed him; he was accompanied by another gentleman.

Question. What small box?

Answer. The box labelled "State officers, 3d division of the eleventh ward," one of the same boxes that he had there before.

Question. Did he between two and three o'clock of that day start for Alderman Remick's office with a small box, and what small box?

Answer. He started between two and three o'clock with a small box, marked the 3d division of the 11th ward—the same small box that he had at Remick's before, and had brought back.

Question. Were you familiar with that box (small box) labelled 3d division of the 11th ward—State officers?

Answer. Not any over-familiar. I knew the box. I had seen it before.

Question. When was your attention first called to it particularly: was it before or after Alderman Williams first went with the boxes to Alderman Remick's office?

Answer. My attention was first particularly called to it the day before Williams went to the office of Alderman Remick the first time.

Question. Where was the box then?

Answer. It was over the vestibule of the box entry into Alderman Williams's office, near the transom.

Question. What time in the day: was it in the morning or the afternoon?

Answer. It was in the neighborhood of ten o'clock in the morning.

Question. Who was in the office at the time?

Answer. Nobody but myself.

Question. You were in the office alone?

Answer. Yes, sir.

Question. Did any person come into the office?

Answer. There was a man who came into the office.

Question. Did he say anything about, or do anything with, that small box labelled "State officers, 3d division of the 11th ward?"

Answer. He asked me for that box to be used by the board of examiners.

Question. Did he or you, or both of you, look for that box near the vestibule?

Answer. I first went to look for the alderman. I could not find him. I then returned to the office. The man was there yet. I made search for the box. He held the chair that I stood on while I looked for it. I had to get up on the back of the chair; it was so high that he had to hold it.

Question. Did you find the box?

Answer. I did, sir.

Question. The same box that was afterwards taken up to Alderman Remick—the same small box?

Answer. The same box, sir.

Question. What was done with it that day?

Answer. I cannot tell what was done with it. It was taken away by this man.

Question. How did he take it away?

Answer. He had it in a basket.

Question. Covered or uncovered?

Answer. Covered with a cloth; it looked more like a table-cloth.

Question. Which way did he go after he left the office?

Answer. He went in a northern direction. He went up St. John's street, turned down Noble, and, to the best of my knowledge, turned up Second street. I missed him at Second and Noble streets.

Question. Was the box brought back to the office? If so, when and by whom?

Answer. It was brought back about 3 o'clock of the same day, by the same person, in the same basket as it went away.

Question. Are you quite sure that the box so taken away and brought back was the box labelled "State officers, 3d division of the 11th ward?"

Answer. To the best of my knowledge, it was the same box.

Question. Where was it put after it was brought back.

Answer. It was placed in the same position it was taken from near the door.

Question. Who was present when it was brought back?

Answer. There was no one in the office but myself.

Question. Is it the box that you carried up to Alderman Remick's office for Alderman Williams when you and Mr. Fromberger accompanied him on his first visit?

Answer. I did not carry that box; I carried the large box.

Question. Is it the same box, then, that Alderman Williams carried on that first visit?

Answer. It was the same box, sir.

Question. Is it the same box that he started and took with him when he started the second time?

Answer. It is the same box that he took with him when he started to go the second time.

Cross-examined by Mr. Hirst.

Question. Can you say whether Alderman Williams was examined, and the box opened and recounted, the second time he started to the office of Alderman Remick?

Answer. It was stated so to me by himself.

Question. He did not go again or take the box again to Alderman Remick's to your knowledge, did he?

Answer. Not after the second time; he took it twice, and that is all.

Question. How long before his second visit to Alderman Remick was his first?

Answer. Well, I think the first was on Tuesday and the second on Friday.

Question. Was this case on the Tuesday when you were present adjourned to the Friday?

Answer. I do not know; I did not remain with the alderman all the time; I left him.

Question. What was the name or names of the witness or witnesses under examination when you were there on the Tuesday?

Answer. I am not positive, but I have an impression on my mind that Alderman Mascher was on the stand. I only remained a few minutes; I am not positive he was examined; it runs in my mind that an alderman was being examined; I paid very little attention to it.

Question. Can you state upon what subject he was giving testimony?

Answer. I cannot.

Question. What counsel was examining him?

Answer. I think Mr. McCabe; it was a person about his size.

Question. Was any box opened while you were there?

Answer. Now that it occurs to my mind, that was the matter at issue—about opening a box.

Question. What box?

Answer. I don't know.

Question. Who was the man who took the little box you have spoken of away from the alderman's office?

Answer. I cannot answer.

Question. Had you ever seen him before?

Answer. I had, sir.

Question. Where and when?

Answer. I can't tell you where I had seen him—at different places.

Question. What places?

Answer. I have seen him on Chestnut street.

Question. What other place?

Answer. I can't specify any other particular place.

Question. Have you ever seen him since the day you spoke of?

Answer. I think once since; it was at Alderman Remick's office. I recognized him there.

Question. When?

Answer. On the day that Mr. Williams made the first visit there with the boxes.

Question. Whom did he speak to there?

Answer. I don't recollect that he was in conversation with anybody while I was there.

Question. Who appeared to know him there?

Answer. I cannot say.

Question. What is his name?

Answer. I don't know.

Question. Did you ever hear or know his name?

Answer. No, sir.

Question. Describe him.

Answer. He was a man about five feet seven and a half or eight inches high; light-complexioned, sharp-featured man, with a Kossuth hat.

Question. During how much of the day on which you say he took the box away were you at Alderman Williams's office?

Answer. I can't say, exactly. The alderman was away nearly all the day. I was there mostly, except dinner hour.

Question. Then the alderman heard no causes that day, did he?

Answer. I don't think there was a case in the office that day. There might have been one early in the morning, for he heard civil suits as early as 7 o'clock in the morning; but I don't think there was between 10 and 3 o'clock; there was no case during that time to my knowledge.

Question. When the man first came in did he ask for the alderman?

Answer. He did, sir.

Question. When you said you would go out and look for the alderman, did he object?

Answer. No, sir.

Question. When the alderman came in, did you inform him of what had passed; and if so, what did he say?

Answer. I didn't see him until late, and then he was not in a condition to be informed of anything.

Question. How late?

Answer. After seven, in the evening, I first saw him that day after the box was taken away.

Question. What do you mean when you speak of his condition?

Answer. I decline answering that unless compelled to. I presume the gentleman infers what I mean.

Question. State what you mean.

Answer. I suppose it must be told: he was considerably inebriated.

Question. Did you the next day, or at any other time, tell him what had happened in reference to the box; and if so, when, and what did you say to him?

Answer. I never did, for one reason that I thought he knew all about it.

Question. What reason have you to think that he knew all about it?

Answer. That I decline positively to answer.

Question. Why do you decline to answer that question?

Answer. If I gave the reasons why I declined, I may as well answer it at once. I have my own reasons for that.

Question. Did you ever mention the circumstance to any one else; if so, when and to whom?

Answer. Not to my recollection, never.

Question. Who subpoenaed you on behalf of Mr. Verree?

Answer. Mr. Gillingham.

Question. Are you quite sure that you have never mentioned this circumstance of carrying away and returning the box to any one?

Answer. I am confident I never have.

Re-examined by Mr. Gilpin.

Question. What station do you hold in company B?

Answer. Orderly sergeant.

Question. When you were subpoenaed by Mr. Gillingham, you had

no conversation with him about the facts you have mentioned here ; he asked you no questions ?

Answer. No, sir ; he read the subpoena to me and I obeyed it.

Question. Did not Mr. Gilpin, counsel for Mr. Verree, call upon you last evening just after dusk ?

Answer. Yes, sir.

Question. Did you not then inform him that you had been subpoenaed by both sides—by Mr. Kline and by Mr. Verree—to attend before the recorder ?

Answer. I did, sir.

Question. State whether or not Mr. Gilpin did not then ask you to appear this morning and testify all you know in relation to the box for State officers of the 3d division of the eleventh ward, which had been deposited at Alderman Williams's office ?

Answer. He did ask me, and I stated that if I was sworn I would tell all about it.

Question. Up to the time that you saw Mr. Gilpin, had you spoken with any one in the interest of Mr. Verree except Mr. Gillingham, who subpoenaed you, about what you were to testify to here, or about what you knew of the box ?

Answer. I never spoke to Mr. Gillingham nor to any one in Mr. Verree's interest, and I never knew Mr. Verree until to-day, when I asked if that was him.

Re-examined by Mr. McCabe.

Question. Since you saw Mr. Gilpin, yesterday, and before you were examined, did you speak to anyone else ?

Answer. No, sir.

SAMUEL S. MCKINNEY.

Attest :

JOSEPH ENEU, *Recorder.*

John N. McGinley, residing at No. 1809 North Sixth street, above Montgomery, a witness produced and sworn, deposes and says:

Examination by Mr. Gilpin.

(Subject to the objections heretofore assigned by the counsel for the contestant.)

Question. Were you an officer in the first division, nineteenth ward, at the October election, 1860 ?

Answer. I was inspector—elected by the democratic party.

Question. State whether you assisted in counting off all the tickets—both full and scratched tickets—for all the candidates.

Answer. I did.

Question. After the full tickets were counted in bundles of ten, were the scratched or slip tickets called off by the judge separately, after each of the inspectors had separately inspected them ?

Answer. Yes, sir ; they were.

Question. State whether the judge, to the best of your knowledge, observation, and information, called them off correctly and truly?

Answer. I believe he did.

Question. Did you not oversee and watch the process of calling them off?

Answer. I did.

Question. After the tally-lists were finished by the clerks, were they examined, and were they found to agree?

Answer. They were not examined nor compared.

Question. Do you recollect the vote for Congress for John P. Verree, for John Kline, and for Mr. Hamilton, cast in that division?

Answer. I do not recollect the vote. I know, by recollection, that there were votes cast for Mr. W. D. Kelley and Mr. Morris. They were a few votes—some three or four.

Question. Can you state Mr. Verree's majority over Mr. Kline?

Answer. I think it was less than 100 that night. I had it on a piece of paper, but I lost that paper.

Question. Who was your clerk?

Answer. Patterson C. Osborn. I did the principal part of the writing myself, and I made out the division return for Osborn.

Question. Was not Osborn familiarly called sometimes by his intimate friends, "Yank Osborn?"

Answer. That was a nickname he had among the boys.

Question. Where is he now?

Answer. He is in the army, in Colonel Kolte's regiment, in General Blenker's brigade.

Question. Has he been about here within the last month, to your knowledge?

Answer. He has not been here for two months.

Question. Would you not be as likely to know of his being here as anybody?

Answer. I would.

Question. You were in the three months' service in Captain McMullin's company?

Answer. Yes, sir.

Cross-examined by Mr. McCabe.

Question. At the close of the count, as near as you can recollect, how much under a hundred was Mr. Verree's majority.

Answer. I think, when we added it up in a hurry, I thought it was 96. I know I made it less than one hundred.

Question. Inasmuch as the tally-lists were not compared, could this not have been a mistake which escaped detection?

Answer. There could have been, for there was one in the return of the judge's to the meeting of the judges and inspectors of this ward of some twenty votes against Philip S. White, which was corrected there by Eldridge, the judge, from the first division of the nineteenth ward. I was president of the board, and when the mistake was discovered, it was corrected by Mr. Eldridge, the judge of that precinct.

Question. Was the mistake of which you speak made in the first division of the 19th ward?

Answer. It was.

Question. How long were the judges of election occupied in making the count that night?

Answer. We were through before 11 o'clock, for we hurried up, in order to get to town to see and hear who was elected for the different offices.

Question. How many divisions of that ward (the 19th) belong to the 3d congressional district, and what are they?

(Objected to as no cross-examination.)

Answer. I think there was eight at that time, which were the 1st, 2d, 3d, 4th, 9th, 10th, and 11th, and I don't know whether the 5th, 6th, 7th, and 8th were in or not. I know part of the ward was in.

Re-examined by Mr. Gilpin.

Question. Can you explain the mistake you allude to in reference to Philip S. White?

Answer. I think that it gave Laughlin some twenty more votes than he received.

Question. What gave Laughlin twenty more votes than he was entitled to? Was it the return made to the return judges by Mr. Eldridge, acting as return judge of the ward?

Answer. No, sir; it was by the return made by him as judge of the division to the judges and inspectors of the ward.

Question. Can you state what White's majority was over Laughlin on the tally-list, and the return of votes filed in the prothonotary's office?

Answer. It was one hundred and something. I know he ran ahead of his ticket.

Question. Was it not as much as 129?

(Mr. Gilpin presents a paper to the witness, and asks him to refresh his memory, and which paper is hereto appended, marked Exhibit L.

Objected to by Mr. McCabe.)

Answer. Upon looking at the paper, I am satisfied that that is the majority. I know that he ran ahead of Mr. Verree considerably.

Question. Look again at Exhibit L, at the vote for Congress as it is there written, and state from your memory, refreshed by this paper, whether 99 was not Mr. Verree's majority returned on the tally-list and the return of votes made out by you?

(Objected to by Mr. McCabe, as refreshing the witness's memory by the paper.)

Answer. It was somewhere thereabouts; it was less than 100.

Question. Have you any doubt that the return of votes which you say was made out by you was correctly made out by you?

Answer. I made out the tally, as the judge called them off, in piles of ten, as I expect they were. I made out the return of votes from that tally.

Question. Have you any doubt that that return of votes was correctly made out by you?

Answer. I have no doubt.

JOHN N. MCGINLEY.

Attest :

JOSEPH ENEU, *Recorder.*

John K. Valentine, attorney-at-law, office with Mr. Gilpin, residing at the Ashland House, on Arch street, Philadelphia, a witness produced and sworn, deposes and says :

Examination by Mr. Gilpin.

(Subject to the objections heretofore assigned by the counsel for the contestant.)

I was present almost all the time during the last week of the examination before Aldermen Remick and Mecke, at Mr. Gilpin's request.

Question. Were you present at the examination of Alderman Mecke and of the box produced by him, said to be of the third division of the 16th ward?

Answer. I was. Alderman Mecke's examination commenced on Saturday, January 26, 1861. His cross-examination was closed on Monday.

Question. State whether Alderman Mecke spoke to you after he had been examined by Mr. McCabe and by Mr. Gilpin, and fix the time as near as you can whether it was before the box was opened, or just as it was opened, or just afterwards; and state what Alderman Mecke said to you.

Answer. During the examination on that afternoon there was a recess for a few moments. I think the recess was just before the opening of the box and the counting the ballots, and after the preliminary examination of Alderman Mecke by Mr. McCabe and Mr. Gilpin as to the custody of the box. I was in the front office, separate from the others: the depositions were taken in the back office. Alderman Mecke said to me that he wished to be examined more particularly in regard to the custody of the box; that he had brought that box to Alderman Remick's office some few days before; that this fact had not appeared on the examination, and he wished that I would call Mr. Gilpin's attention to it, that he might have the opportunity of making this statement in case there was anything wrong in the box. He wished that I should state to Mr. Gilpin that he desired that it should not be known that he had made such a request. I did make that fact known to Mr. Gilpin. That led to the call that Mr. Gilpin made upon the alderman, so I was informed by Mr. Gilpin.

Question. Do you recollect an expression made by Alderman Mecke at that time in reference to responsibility for the condition of the box? If you do, state what it was.

Answer. I know that the bright and fresh appearance of the wax on that box was a subject of remark. I do not recollect any particular expression of Alderman Mecke's, but his conversation with me

I understood was from an apprehension that the box might have been tampered with, and he wished it to be known that the box had been out of his custody. I believe several persons noticed the fresh appearance of the wax. I think Mr. Bringhurst, a friend of Mr. Verree's, and myself both called Mr. Gilpin's attention to it, and that Alderman Mecke stated that he noticed it.

J. K. VALENTINE.

Attest :

JOSEPH ENEU, *Recorder*.

Adjourned to meet on Saturday, December 21, 1861, at 12 o'clock.

SATURDAY, *December 21, 1861.*

Parties present by their attorneys, viz: John P. Verree, esq., by Charles Gilpin, esq.; John Kline, esq., by W. S. Hirst and Edward McCabe, esqs.

George H. Mecke, alderman, residing at 1130 North Third street, above George street and Beaver, a witness produced and duly sworn, deposes and says :

Examination by Mr. Gilpin.

(Subject to the exceptions heretofore assigned by the counsel for the contestant.)

Question. You are an alderman of the city of Philadelphia?

Answer. Yes, I am an alderman of the 16th ward, and have been since May, 1860.

Question. You and Alderman Remick took the depositions in January last?

Answer. Yes.

Question. State whether you were there examined as to the ballot-box for State officers of the third division of the 16th ward?

Answer. I was.

Question. State whether, after it had been opened, counted, and sealed up again, you were not requested by Mr. Gilpin, counsel for Mr. Verree, to retain it in your custody, and not to surrender it when the city commissioners sent around to collect the boxes for the next election.

Answer. Yes, sir.

Question. Have you the box here with you?

Answer. I have, sir.

Question. Please produce it.

Answer. This is the box.

Mr. Gilpin now requests that the box produced by the witness shall be sealed anew by the recorder, and that after being sealed anew by him it shall be covered by a paper envelope, securely sealed, and marked "Kline vs. Verree, contested election, third congressional district, Pennsylvania," not to be opened by the clerk, but to be opened before the Committee of Elections, and directed to the Clerk of the House of Representatives at Washington; that a second en-

velope shall be thereafter placed over the box, and securely sealed by the recorder, and marked, "Kline *vs.* Verree, contested election, third congressional district of Pennsylvania," and directed to the Clerk of the House of Representatives at Washington; and that the recorder be directed to transmit the same safely to said clerk in the manner which he deems most safe for its transmission.

Mr. Gilpin hands the witness over for cross-examination.

Cross-examination by Mr. Hirst.

Question. This box was opened and emptied, and the votes recounted in your presence, I believe.

Answer. Yes, sir.

Question. Were the contents emptied out all at once, or were they taken out in bundles separately?

Answer. They were taken out in bundles separately, one bundle at a time.

Question. Please state how the votes were counted and returned to the box.

Answer. Each bundle was counted as it was taken out, and returned to the box after they were all counted.

Question by Mr. Gilpin. State whether the mode of taking the bundles out and noting the contents of each bundle was not adopted at the request of Mr. Gilpin.

Answer. I believe it was.

GEO. H. MECKE.

Attest:

JOSEPH ENEU, *Recorder.*

The ballot-box produced by Alderman Mecke, and herewith transmitted, was this day resealed with red tape by the recorder.

Adjourned to meet on Monday, December 23, 1861, at 12 m.

MONDAY, *December 23, 1861.*

Parties present by their counsel, to wit: John P. Verree, esq., by Charles Gilpin, esq.; John Kline, esq., by Edward McCabe, esq.

Mr. Gilpin asks to reserve the right to examine Joseph G. Gillingham after to-day in relation to the notices and subpoenas and service thereof; and there being no objection, he waives any other meeting to-day, for the purpose of having Mr. Gillingham present.

Mr. Gilpin proposes that the ballot-box produced here by Alderman Mecke, and to be sent to Washington, shall be sent, after being enveloped as directed by the recorder, through the agency of Edward G. Wood, mail agent between Philadelphia and Washington, to be by him delivered to the Clerk of the House of Representatives. The object in making the proposition is to provide for its transporta-

tion without its being put into and thrown about in a common mail-bag. Mr. Gilpin requests contestant and his counsel to state whether there is any objection to this mode of transmission.

Mr. McCabe, for the contestant, states that there is no objection to the mode of transmission proposed.

I hereby certify that the foregoing testimony was taken before me on the several days mentioned in the record, and the several depositions were reduced to writing and attested by the respective witnesses in my presence and in the presence of the counsel of John P. Verree and John Kline, esqs.; and I hereby return the same to the Clerk of the House of Representatives, in pursuance of law. As witness my hand and seal this 24th day of December, A. D. 1861.

JOSEPH FNEU,

Recorder of the City of Philadelphia.

The following is a statement of the costs by me taxed against John P. Verree, for fees of office and witnesses:

Charles D. Knight, prothonotary, for certified copies of list of voters of 3d division, 11th ward, and list of voters of the 3d division, 16th ward, paid by John P. Verree, esq.	\$ 10 00
Thomas E. Little, a witness, three days' attendance	2 25
David Vickery, a witness, two days' attendance	1 50
Benjamin Markley, a witness, three days' attendance	2 25
William F. Beggs, a witness, two days' attendance	1 50
Jeremiah Robinson, a witness, one day's attendance	75
Hyam Monheimer, a witness, one day's attendance	75
James C. Baxter, a witness, one day's attendance	75
John F. Cossart, a witness, one day's attendance	75
George H. Mecke, a witness, two days' attendance	1 50
Samuel L. McKinney, a witness, one day's attendance	75
Joseph G. Gillingham, a witness, four days' attendance	3 00
Charles D. Knight, a witness, one day's attendance	75
Albert E. Eldridge, a witness, one day's attendance	75
Thomas Haig, jr., a witness, two days' attendance	1 50
John K. Valentine, a witness, one day's attendance	75
Thomas C. Swain, a witness, three days' attendance	2 25
James Mahony, a witness, three days' attendance	2 25
John McKinley, a witness, two days' attendance	1 50
Alfred Mason, a witness, one day's attendance	75
Charles Morrison, a witness, one day's attendance	75
Joseph G. Gillingham, serving subpoenas, mileage, &c	5 00
Joseph Eneu, recorder, fees for taking testimony, &c	150 00

EXHIBIT A.

THIRTY-SEVENTH CONGRESS, SECOND SESSION.

CONGRESS OF THE UNITED STATES.

IN THE HOUSE OF REPRESENTATIVES,

December 4, 1861.

On motion of Mr. Dawes, from the Committee of Elections,

Resolved, That in the matter of the contested election case in the third congressional district in Pennsylvania, a further time of ten days is hereby granted to the contestant, for the purpose of taking testimony, from and after the expiration of the twenty days granted to the sitting member by resolution of the House, of the 3d instant; said testimony to be confined to such as may rebut the testimony taken under said resolution, and to be taken before the same magistrate, and, in all respects, in the manner provided in said resolution.

Attest :

EM. ETHERIDGE, *Clerk.*

EXHIBIT B.

PHILADELPHIA, *December 14, 1861.*

In the matter of the contested election for the third congressional district of Pennsylvania, for the House of Representatives of the United States, for the thirty-seventh Congress.

SIR: You are hereby notified that, in pursuance of a resolution emanating from the Committee of Elections, and passed the House of Representatives of the United States the 4th day of December, A. D. 1861, it is my intention to examine witnesses before the Hon. Joseph Eneu, recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, second story, in the city of Philadelphia, on Tuesday, the 24th day of December, A. D. 1861, at 12 o'clock m. of said day, and each successive day thereafter, except Sunday and Christmas, at the same time and place, till the testimony is taken and the witnesses are examined.

The witnesses whom I intend to examine, and their places of residence, are as follows:

John Carlin, back of 931 New Market street.

William L. Nutt, 483 York avenue.

William Bowers, in Colonel Sweeney's regiment.

Charles Hartnecht, corner of Schlessman's alley and Third street.

Francis J. Noad, North Front near Norris street.

Stephen James, Thirteenth and Market streets.

Stephen Bowers, Fourth street, above Columbia avenue.

Thomas Brace, Second street, below Diamond.

Daniel Dwyer, 700 Richmond street.

William J. Gibbons, corner Belgrade and Frankford road.

John Miller, 1030 Lawrence street.
 David Moore, 1340 Columbia avenue.
 William C. Rice, 702 North Second street.
 Edward Clark, 1338 North Fourth street.
 Hugh Clark, 1338 North Fourth street.
 Nathan Lukens, Ella street, near Emerald.
 John Diamond, Carrol, near Fifth street.
 James Goodman, 453 North Sixth street.
 Henry Daley, Frankford road, above Hart lane.
 Francis Daley, New Market, below Callowhill street.
 John Motz, Savory street, above Girard avenue.
 Edward Johnson, 1113 Frankford road.
 Thomas C. Swain, 126 Girard avenue.
 William H. Swain, 126 Girard avenue.
 John Stevens, 1150 Sites street.
 James Mahoney, 1051 Germantown avenue.
 B. F. Richley, 1109 South street.
 Alderman William Remick, 543 North Third street.
 Joseph Rafferty, Wood street, between Amber and Carroll streets.
 Thomas Timmins, 436 Spruce street.
 John K. Gardner, Second street, below Girard avenue, east side.
 Anthony Campbell, 446 North Front street.

All of which is respectfully submitted.

JOHN KLINE.

Hon. JOHN P. VERREE.

EXHIBIT C.

KLINE *vs.* VERREE.

In the matter of the contested election in the third congressional district of Pennsylvania.

DECEMBER 17, 1861.

SIR: You will please take notice that I will also examine the following witnesses, on the 27th day of December, A. D. 1861, before Recorder Eneu, at his office, No. 432 Chestnut street, in the city of Philadelphia.

The witnesses whom I intend to examine, and their places of residence, are as follows:

John N. McGinley, 6th, above Montgomery street.
 Samuel M. Lane, 542 Brook street.
 James McManes, 13 Jefferson street.
 Edward Simpson, 126 Coates street.
 All of which is respectfully submitted.

JOHN KLINE.

Hon. JOHN P. VERREE.

EXHIBIT D.

KLINE *vs.* VERREE.

In the matter of the contested election in the third congressional district of Pennsylvania.

DECEMBER 18, 1861.

SIR: You will please take notice that I will also examine the following witnesses in the above case, on the 28th day of December, A. D. 1861, before Recorder Eneu, at his office, No. 432 Chestnut street, in the city of Philadelphia.

The witnesses whom I intend to examine, and their places of residence, are as follows:

Charles Morrison, 157 Laurel street, at Alderman Remick's office.

Elizabeth Butcher, 226 Callowhill street.

Samuel L. McKinney, constable 11th ward, in United States army, (residence unknown.)

George W. Ash, at Alderman Williams's office, 226 Callowhill street.

Mrs. Alderman Frances Field, 2052 North Fifth, below Diamond st.

Miss Nancy Creighton, 2052 North Fifth, below Diamond street.

Harry Stewart Colden, 2052 North Fifth, below Diamond street.

Andrew Roedel, Col. Magilton's 33d regiment Pennsylvania vol'rs.

Mrs. Alderman Catharine Mecke, Third, above George street.

All of which is respectfully submitted.

JOHN KLINE.

Hon. JOHN P. VERREE.

EXHIBIT E.

KLINE *vs.* VERREE.

In the matter of the contested election in the third congressional district of Pennsylvania.

DECEMBER 20, 1861.

SIR: You will please take notice that I will also examine the following witnesses, before Recorder Eneu, at his office, No. 432 Chestnut street, in the city of Philadelphia, on the 30th day of December, A. D. 1861.

The witnesses whom I intend to examine, and their places of residence, are as follows:

Alderman George W. Mecke, Third, above George street.

William Loughlin, 632 Christian street.

Samuel C. Thompson, Fourth, below Spruce street.

Alderman George W. Williams, 226 Callowhill street.

All of which is respectfully submitted.

JOHN KLINE.

Hon. JOHN P. VERREE.

EXHIBIT F.

KLINE *vs.* VERREE.

In the matter of the contested election in the third congressional district of Pennsylvania.

DECEMBER 23, 1861.

SIR: You will please take notice that I will also examine the following witnesses, before Recorder Eneu, at his office, No. 432 Chestnut street, in the city of Philadelphia, on the 2d day of January, A. D. 1862.

The witnesses whom I intend to examine, and their places of residence, are as follows:

Thomas O'Brien, 404 Brown street, (back.)

Jonathan K. Wright, Poplar, above Fifth street.

Madison Craig, 327 North Fourth street.

Conrad Kline, 1637 Seybert street.

Joseph Hinkle, 311 Green street.

Charles Leshner, (unknown.)

Catharine Palmer Brown, above Twelfth.

Joseph Langley, (unknown.)

James Bradford, (unknown.)

Daniel Underkofler, grocer, 215 Callowhill street.

Henry Adams, (unknown.)

Alderman John Clowds, 103 Marlborough street.

All of which is respectfully submitted.

JOHN KLINE.

Hon. JOHN P. VERREE.

EXHIBIT G.

KLINE *vs.* VERREE.

In the matter of the contested election in the third congressional district of Pennsylvania.

DECEMBER 23, 1861.

SIR: You will please take notice that I will also examine the following witnesses, before Recorder Eneu, at his office, No. 432 Chestnut street, in the city of Philadelphia, on the 2d day of January, A. D. 1862.

The witnesses whom I intend to examine, and their places of residence, are as follows:

Adam Treft, 805 New Market street, (back.)

George C. Leidy, New Market place, above Brown street.

James Lowry, Nagle street, near Thompson.

All of which is respectfully submitted.

JOHN KLINE.

Hon. JOHN P. VERREE.

EXHIBIT H.

ROBERT HUNT *vs.* JOSEPH LAME AND LOUDEN S. CARRL.

Summons executed January 7. Returned January 15, at 8 o'clock a. m. S. L. McKinney, constable. And now, January 15, plaintiff appeared, and defendant also. Defendant asks continuance to January 29, at 9 a. m., and case continued.

JOSEPH ENEU.

EXHIBIT I.

STATE OF PENNSYLVANIA, *City of Philadelphia, ss:*

Christian F. Erichson, being duly sworn, did depose and say, that, as clerk for Joseph Eneu, esquire, recorder of the city of Philadelphia, before whom the testimony of witnesses is to be taken in the matter of the contest for a seat in the House of Representatives of the United States of America in the thirty-seventh Congress, between John Kline, contestant, and John P. Verree, incumbent, he would impartially and truly write down the whole of the evidence of each and every witness produced, sworn or affirmed, and examined in relation to any matter touching said contest, and in all things truly and faithfully perform his duty, as clerk, to the best of his ability.

CHRISTIAN F. ERICHSON.

Sworn to and subscribed before me this 24th day of December, A. D. 1861.

JOSEPH ENEU, *Recorder.*UNITED STATES, *Commonwealth of Pennsylvania, ss:*

To John Miller, William Remick, William C. Rice, Samuel M. Lane, Charles Morrison, Samuel L. McKinney, George W. Ash, Alderman George W. Mecke, Alderman G. W. Williams, Adam Treft, William Laughlin, Elizabeth Butcher, Mrs. Alderman Francis Field, Miss Nancy Creighton, Harry S. Colden, Mrs. Catharine Mecke, Hugh Clark, Edward Clark, Jonathan K. Wright, James Lowry: We command you, and each of you, that, setting aside all manner of business and excuses, you be and appear in your proper person before us, at the office of Recorder Eneu, No. 432 Chestnut street, second story, in the second congressional district, in the city of Philadelphia, on Tuesday, the 24th day of December, A. D. 1861, at 12 o'clock m. of said day, to testify all and singular those things which you shall know, or of which you may be inquired, touching and concerning the election for members of Congress held in the third congressional district of Pennsylvania, on the 9th day of October, A. D. 1860, the validity of which said election is contested by John Kline against John P. Verree, who has been proclaimed elected by William F.

Packer, at that time governor of Pennsylvania. Your attendance to appear is enjoined by a resolution of the House of Representatives of the United States, passed the 4th day of December, A. D. 1861, and by a law of the United States, entitled "An act to prescribe the mode of obtaining evidence in cases of contested elections," approved the 19th day of February, A. D. 1851.

JOSEPH ENEU, *Recorder.*

In the matter of the contested election in the third congressional district of Pennsylvania, for a seat to represent said district in the House of Representatives of the United States of America in the thirty-seventh Congress, between John Kline, contestant, and John P. Verree, incumbent.

Depositions of witnesses taken before Joseph Eneu, esq., recorder of the city of Philadelphia, at his office, No. 432 Chestnut street, in the said city, in part of John Kline, esq., contestant, in pursuance of a resolution of the House of Representatives of the United States of America, passed the 4th day of December, A. D. 1861, a copy of which is hereunto annexed, marked A.

TUESDAY, *December 24, 1861.*

Parties and their counsel present, viz: John Kline, esq., by Edward McCabe, esq.; John P. Verree, esq., by Charles Gilpin, esq.

The recorder appointed Christian F. Erickson clerk, to write or transcribe the testimony in the above matter, who was duly sworn, and the oath is hereto annexed, marked —.

Mr. McCabe, the counsel for the contestant, reserving all objections and under protest, proceeds to take testimony on behalf of contestant. He protests against taking testimony before the recorder, who resides in the first congressional district, and not in the third district, where the election in question was held, because the taking of testimony before the recorder under those circumstances is in conflict with the act of Congress, passed the 19th day of February, A. D. 1861, requiring testimony to be taken before a magistrate residing in the district in which the election is held, and because that act cannot be abrogated by a resolution of the House of Representatives.

Mr. Gilpin, for incumbent, does not insist on the contestant taking any testimony before the recorder, unless contestant's counsel thinks that he has the right to do so, and that it is regular and lawful to do so.

Mr. McCabe offers in evidence the resolution of the House of Representatives, dated the 4th day of December, A. D. 1861, and hereto annexed, marked A.

Mr. McCabe offers in evidence the several copies of notices hereto annexed and respectively marked B, C, D, E, F, and G, which said several notices incumbent's counsel acknowledges to have been served upon incumbent on the several days they bear date.

Examination by Mr. McCabe.

William C. Rice, jeweller and watchmaker, residing at No. 702 North Second street, Philadelphia, a witness produced and duly sworn, deposes and says:

Question. Look upon the several notices respectively marked B, C, D, E, F, and G, and say upon whom you served the originals—when and where?

Answer. I served them upon Mr. Verree, by leaving them all but one at his residence, the other being served personally and upon the days they respectively bear date. I also sent copies of the notices, marked B, C, and D, to Washington, addressed to Mr. Verree, on the day those three notices bear date.

W. C. RICE.

Attest:

JOSEPH ENEU, *Recorder.*

Adjourned to meet on Thursday, December 26, 1861, at 12 o'clock m.

THURSDAY, *December 26, 1861.*

Present, John Kline, esq., contestant; John P. Verree, esq., and his counsel, Charles Gilpin, esq.

Adjourned to meet on Saturday, the 28th day of December, A. D. 1861, at 12 o'clock m.

SATURDAY, *December 28, 1861.*

Present, parties and their counsel, viz: John Kline, esq., and Edward McCabe, esq.; John P. Verree, esq., and Charles Gilpin, esq.

Adjourned to meet on Monday, December 30, 1861, at 12 m.

MONDAY, *December 30, 1861.*

Parties present and their counsel, viz: John Kline, esq., and E. McCabe, esq.; John P. Verree, esq., and C. Gilpin, esq.

George W. Ash, attorney at law, residing at 1719 Pine street, a witness produced and duly sworn, deposes and says:

Mr. McCabe offers this witness to show that he was present at Alderman Williams's office during the morning and day of the 7th of January, A. D. 1861, that being the day before Alderman Williams, under subpœna, went to Alderman Remick's office with the boxes, one of which was subsequently opened; and also to show that the reputation of Samuel McKinney, a witness examined on the part of incumbent for truth and veracity, is bad, and that he is not credible even on oath.

Examination by Mr. McCabe.

Question. What is your business?

Answer. Attorney at law and conveyancer.

Question. Are you in the habit of going to Alderman Williams's office, and being there, and how often, and since when?

Answer. Yes; for three or four years past almost daily, having the use of his back office for my professional business, and assisting him in his records, filling up blanks, &c., and drawing papers; whatever belongs to conveyancing at an alderman's office.

Question. How much of the day do you generally spend there?

Answer. More frequently all day and evening. I am sometimes at the courts, and sometimes at the offices of the courts, and at other aldermen's offices.

Question. Were you at Alderman Williams's office on the 7th day of January, 1861? and if so, state what part of the day you were there, and how long.

Answer. That I can only answer by reference to my diary of that day. I recollect the circumstances distinctly, from the fact of Maule's board yard having been burned or destroyed by fire the previous night, as I went to my daughter's, at 24th and Pine streets, on the morning of the 7th. She lived in that neighborhood, and from thence I went by the Pine street cars to Alderman Williams's office, where I must have arrived after 10 o'clock, and remained there (I might have gone out occasionally) until after 3 o'clock in the afternoon, and then I left.

Question. Of what duration would the possible occasional absences of which you speak be?

Answer. Scarcely five or ten minutes; most generally not three.

Question. Did you see any man come into Alderman Williams's office that day to inquire about any ballot-box, or any kind of box whatever?

Answer. I have no recollection of any such occurrence.

Question. From your knowledge of Alderman Williams's habits of attention to business, acquired by being at his office, I ask you to say what is his practice in relation to attendance on the office.

Answer. At the time of the returns of summons or warrants, or any engagement at any particular hour, unless from sickness confining him to his chamber or absence from the city, I have generally found him prompt in attendance.

Question. When not sick or absent from the city, is he ever absent whole days from the office?

Answer. I have never known him to be absent whole days. I do not know that I could recur to a whole day. I have known him to be absent a large part of the day; a half day at a time.

Question. Does not Alderman Williams reside in the same house in which he keeps his office, and did he not in January, 1861?

Answer. He does, and he did on the 7th of January and for several years previous, and does now.

Question. Do you know Samuel L. McKinney, and how long have you known him?

Answer. I know Samuel L. McKinney, constable of the 11th ward, whom I presume is the person. He is the constable who attended at Alderman Williams's office for the last three years. I have known him for about ten or fifteen years.

Question. Do you know his character and reputation for truth and veracity?

Answer. I cannot say from the declarations of others, beyond ordinary conversation between myself and others. I can give you my impression if you want that. I cannot give you general report.

Question. Have you heard other people speak of his character for truth and veracity?

Answer. Yes, I have.

Question. Many?

Answer. Yes; I have heard a good many.

Question. Is his character for truth and veracity among others whom you have heard speak of him good or bad?

Answer. Rather unfavorable to him.

Question. From what you have heard others say of him and what you know of him yourself, would you believe him on oath?

(Mr. Gilpin objects to so much of the question as predicates the answer on his own knowledge, and to any answer to the question as a whole.)

Answer. Not where he was directly interested in the event or issue.

Cross-examined by Mr. Gilpin.

Question. Would you not believe him on oath where he had no interest in the event or issue?

Answer. Yes; I would believe him on oath then.

Question. Please state what persons you have ever heard speak unfavorably or disparagingly of his general character for truth and veracity. Confine your answer to persons who have spoken to you about his character for truth and veracity.

Answer. I could not specify. I do not bring any to my recollection. I heard a great many say so.

Re-examined by Mr. McCabe.

Question. From what you have heard others say of him, would you believe him on oath if he had a pecuniary interest?

Answer. I should receive his testimony with exceeding caution.
GEO. W. ASH.

Attest:

JOSEPH ENEU, *Recorder.*

George W. Williams, alderman, residing at No. 226 Callowhill street, Philadelphia, a witness produced and sworn, deposes and says:

Examination by Mr. McCabe.

Question. You are the alderman of the 11th ward?

Answer. Yes, sir; I am one of them.

Question. You had custody of the box of the 3d division of the 11th ward, which was opened before Aldermen Remick and Mecke, had you not?

Answer. I had, sir.

Question. Were you in your office on the day of the 7th of January, 1861?

Answer. I cannot speak positively, except from a little memorandum I made; I was there.

Question. What time of the day?

Answer. Well, I cannot speak positively.

Question. What is your usual habit of attendance at the office?

Answer. I live in the house, and am a pretty early riser, and few in the neighborhood are up as early as I am; and my general habits are to be in and about my office during the day, unless called out on business.

Question. Are you generally there most of the day?

Answer. Yes, sir.

Question. You were said by Samuel L. McKinney, in his testimony, to have returned home the evening of the day before you first went to Alderman Remick's office with the two boxes inebriated. Is that so?

Answer. No, sir.

Question. Do you remember the day that you first went to Alderman Remick's office with the boxes of the 3d division of the 11th ward?

Answer. I cannot from memory recollect the date of any one of the days that I was there.

Question. Did you not go there for the first time on the day that you were subpoenaed to attend?

Answer. To the best of my recollection I obeyed the subpoena whenever it required my attendance there.

Question. Do you know Samuel L. McKinney, and how long have you known him?

Answer. I should think I have known him at least twenty years.

Question. Do you know his general character among others for truth and veracity?

Answer. I have heard it spoken of very repeatedly under various circumstances.

Question. Is that character for truth and veracity good or bad?

Answer. Well, I can't say that it is good.

Question. From what you have heard others say of him for truth and veracity, would you believe him on oath?

Answer. It would depend altogether upon circumstances whether I would or not.

Question. Under what circumstances would you not?

Answer. I think he could be swayed from the truth for pecuniary considerations.

Cross-examined by Mr. Gilpin.

Question. Is this the paper or memorandum from which you speak? (Paper hereto appended, marked exhibit H, handed to the witness.)

Answer. It is. It is an extract from my docket that I was there that day in my office, and issued a summons for Robert Hunt. I recollect the circumstance very well, he being a particular acquaintance of mine, and frequently stops in my office to see me.

Question. Is it not from that memorandum and the docket alone that you fix the date?

Answer. Yes.

Question. What day were you subpoenaed to attend at Alderman Remick's office?

Answer. That I can't say, positively. It was some days before I appeared there, to the best of my recollection.

Question. Did not Mr. Kline, after you had been subpoenaed, come and notify you of the day that he wanted you to come there?

Answer. I think that quite likely, as he promised to do so when I was subpoenaed, that I might not lose more time than was necessary.

Question. How often did you go to Alderman Remick's office?

Answer. Well, that I can't speak positively of. To the best of my recollection, it was three or five times. I kept no account of it.

Question. Who went with you?

Answer. I don't recollect that any one did.

Question. Did you not on one occasion take several boxes there?

Answer. Not, to my recollection, over two; one was a small box.

Question. Give me the names of the persons whom you have heard speak unfavorably or disparagingly of Samuel L. McKinney's character for truth and veracity.

Answer. Their name is so near legion that I couldn't give any.

Question. Can't you give me one or more?

Answer. I can't place my memory on any particular name, for I never paid much attention to their opinion of him.

Question. When did you hear any one speak of him? Give me the date.

Answer. That would be impossible, for me to give you any date. I never kept a memorandum of it.

Question. How long did he continue to act as constable at your office?

Answer. I can't say how many days, weeks, or months. He continued to serve processes from my office until the court of quarter sessions sent him down to Moyamensing; while there he didn't serve any; when he came out he was there in the office; he didn't serve any; there was very little done in the office.

Question. When did he cease to act at your office as constable?

Answer. That I couldn't say.

Question. Give me the year he ceased.

Answer. Well, I think it is likely that he has served some at the commencement of this year, previous to going into the service.

Question. Are you not sure that he served process from your office in 1861?

Answer. Yes, sir, I am certain he has; he got a furlough from camp at Easton, and served one or two while he was here.

Question. Were his returns sworn to?

Answer. My habit is not to swear the constables to every return they make; they are sworn by the court, and I regarded every return as made under oath.

Question. Was he never sworn by you in your office in relation to any return or service of notice?

Answer. I don't recollect of ever having sworn him specially to any return.

Question. When returns of service were made, the time for hearing arrived, and the defendant failed to appear, if the plaintiff appeared did you not give judgment in the absence of the defendant upon the return of service?

Answer. If the plaintiff made out his case to my satisfaction, I gave judgment by default against the defendant, seeing the service entered on the back of the summons by the constable. I know their signatures always when I see them.

Question. Did you in such cases enter such judgments by default of appearance of defendant when the process was returned and signed by Samuel L. McKinney, constable?

Answer. Yes; having examined the back of the summons, and seeing that it was returned served by him personally or at the residence of the defendant, I proceeded to hear the case, and gave judgment by default against the defendant.

Re-examined by Mr. McCabe.

Question. Have you any knowledge of any man going, at any time, to your office for the purpose of getting the ballot-box of the third division of the eleventh ward?

Answer. I have no knowledge of any person ever doing it, and never heard tell of it until this investigation here; that's the first intimation that I heard that it did occur; nor do I believe that it ever occurred unless Samuel L. McKinney took it himself.

Question. Did you ever at any time authorize any man to get that box from your office?

Answer. No, sir, never; nor never delivered it when the sheriff sent for it unless he sent an order for its delivery.

Question. On the day when you first went to Alderman Remick's office with the boxes you have spoken of, were there not present a number of other aldermen with their boxes, and was it not on the day that you were first subpoenaed to attend?

Answer. I can only say, to the best of my recollection, I obeyed the subpoena; there were other aldermen present.

Question. Was it not on the first day of your attendance at Alderman Remick's office or afterwards that Mr. Kline informed you that he would let you know when to attend?

(Objected to as leading.)

Answer. That I can't remember.

Question. How long had Samuel L. McKinney been constable in the eleventh ward?

Answer. I can't say how many years he had been constable; he had been constable more than once, however; I believe his last election was in 1859.

Re-cross-examined by Mr. Gilpin.

Question. State whether Alderman Shoemaker was not under examination when you attended Alderman Remick's office with the two boxes?

Answer. Well, I can't say which of the aldermen was under examination. I was informed that I would not be wanted that day, and went home.

Question. Can you say whether it was Alderman Shoemaker or Alderman Megonegal that was under examination?

(Objected to because it pre-supposes that some alderman was under examination.)

Answer. No, sir; I could not say positively.

Question. Do you think you were there more than twice?

Answer. I cannot say; I was there more than once I recollect very well.

Question. You have said you obeyed the subpoena; state whether, on your first attendance, you took everything with you you were called upon to take by the subpoena?

Answer. I stated previously that I obeyed the subpoena, as far as my recollection served me, by understanding that I should not be taken from my office unless my attendance should be required.

Question. Did you, at any time, take to Alderman Remick's office the boxes of the eighth division of the eleventh ward?

Answer. I can't recollect whether one of the boxes were of the eighth or both were of the third division; one was a large box and the other a small box, and they are now in my house; I have not given up any of the boxes on the sheriff's order that were on that examination; they were in charge of Elizabeth Butcher, a member of my family.

Question. Are those two boxes, the one large and the other small, the only boxes you ever took to Alderman Remick's office?

Answer. To the best of my recollection they are.

Re-examined by Mr. McCabe.

Question. Do you know whether any alderman at all was under examination the day of your first attendance at Alderman Remick's office or not?

Answer. I can't say who was under examination.

Question. Had you in your custody at that time any boxes belonging to the eighth division of the eleventh ward?

Answer. I cannot say that I had. I received the boxes from three precincts of that ward.

GEORGE WILLIAMS.

Attest :

JOSEPH ENEU, *Recorder.*

James Lowry, residing at No. 1263 Naglee street, a witness produced and duly sworn, deposes and says:

(Mr. Gilpin waives the two days of the ten yet to expire on the notice of this witness's examination.)

Examination by Mr. McCabe.

Question. What is your business?

Answer. My business is recruiting, and I am now recruiting. I hold a captain's commission from Governor Curtin.

Question. Do you know Samuel L. McKinney, constable of the 11th ward, and how long have you known him?

Answer. I have known him as a man for about twelve or fifteen years.

Question. Do you know his general character for truth and veracity—what others say of him?

Answer. From what others say of him, he has got a bad character for truth and veracity.

Question. Have you heard his character for truth and veracity spoken of by other persons?

Answer. I lived in the same ward with him for years, and he is a man who is generally spoken of as being a notorious liar.

Question. From what you have heard others say of him in relation to his character for truth and veracity, would you believe him on oath?

Answer. Not unless I knew myself that which he had sworn to; unless I had known of my own knowledge what he had sworn to.

Question. Before you obtained a captain's commission what business were you engaged in?

Answer. I was agent for the guardians of the poor for the 4th poor district; that is about thirteen months ago.

Cross-examined by Mr. Gilpin.

Question. Give me the names of persons whom you have heard speak of McKinney's character for truth and veracity.

Answer. It would be impossible to give them all.

Question. Give me some.

Answer. Edward Manigle, George Phipps, Henry Walker, James Galbraith, and Mr. Steelman, whose first name I do not recollect. I believe it is Edward. I guess that will do.

Question. Is that all you recollect?

Answer. That is all that I can name just now that I have heard speak.

Question. Did you ever vote in the 11th ward; if yea, for whom for constable?

Answer. Well, I voted once for Samuel L. McKinney for constable. I couldn't give the year, but it was the first year he ran for constable in that ward.

Question. Were you of the same or different politics?

Answer. I always voted the same political ticket.

Question. Are you, and have you always been, on good terms with Mr. McKinney?

Answer. I have always been on good terms with him, and never had any occasion to quarrel with him, and we are not now bad friends.

Question. State the politics of Edward Manigle, George Phipps, Henry Walker, James Galbraith, and Steelman.

Answer. I have known Edward Manigle as always in opposition to the democratic party. Phipps always opposed the democratic party. Can't say as to Walker. Galbraith always opposed the democratic party. I can't say as to Steelman's politics, but I have known him to vote the democratic ticket.

Question. What ward do they belong to?

Answer. Mr. Galbraith and Mr. Walker belonged to the eleventh ward, and Mr. Steelman belonged to the twelfth ward. I don't know as to the others.

Question. Had you never any difficulty or difference with McKinney of any kind?

Answer. I never had any difficulty or difference with him at all.

Question. Was he not constable of the eleventh ward for many years?

Answer. Yes, sir; he was elected three or four times.

Question. State whether, at different times, McKinney did not act as constable of the eleventh ward as many as six to ten years.

Answer. No; I don't think he was elected for ten years.

Question. Did not Samuel L. McKinney serve as constable of the eleventh ward, not successively, but, computing the several years of service, as many as six to ten years?

Answer. I will say from five to six.

Question. What was your business before you were out-door agent of the guardians of the poor?

Answer. I was a ladies' shoemaker.

JAMES LOWRY.

Attest :

JOSEPH ENEU, *Recorder*.

Adjourned to meet Tuesday, December 31, 1851.

TUESDAY, *December 31, 1861.*

Parties present and their counsel, viz: John Kline, esq., by Edward McCabe, esq.; John P. Verree, esq., by Charles Gilpin, esq.

Hugh Clark, alderman, residing at 1338 North Fourth street, who, being produced and duly sworn, deposes and says :

Examination by Mr. McCabe.

Question. You are an alderman of the seventeenth ward?

Answer. One of them. I have been so since January 7, 1833.

Question. Do you know Samuel L. McKinney; and how long have you known him?

Answer. I have known him very well for ten or twelve years past; perhaps more.

Question. Do you know his general character for truth and veracity; and have you heard many people speak of him?

Answer. I do know his general character for truth and veracity, and have heard a great many speak of him.

Question. Is it good or bad?

Answer. It is bad.

Question. From what you have heard others say of his character for truth and veracity, would you believe him on oath?

Answer. No, sir; most undoubtedly not.

Cross-examined by Mr. Gilpin.

Question. Did he ever attend at your office?

Answer. Yes, sir; he called there frequently, as other officers do, but he has not been there to attend to business; he might have served a warrant or two; that is about all the business he did.

HUGH CLARK.

Attest:

JOSEPH ENEU, *Recorder.*

Benjamin M. Wright, residing at No. 888 Randolph street, livery-stable keeper, a witness produced and duly sworn, deposes and says:

(Mr. Gilpin waives one day to elapse according to notice.)

Examination by Mr. McCabe.

Question. Do you know Samuel L. McKinney, constable of the eleventh ward; and how long have you known him?

Answer. Well, I suppose I have known him near thirty years as man and boy.

Question. Do you know his general character for truth and veracity?

Answer. Yes, sir; I know it to be bad. I have reason to know it.

Question. Have you heard many persons speak of his character for truth and veracity?

Answer. I have.

Question. From what you have heard others say of his character for truth and veracity, would you believe him on oath?

Answer. No sooner than I would Jeff. Davis.

Question. Would you believe him at all upon his oath?

Answer. No; I would not at all.

Cross-examined by Mr. Gilpin.

Question. You say in one of your answers, "I have reason to know it." State what your reason is that you have referred to.

Answer. I had a business transaction with him. He hired a horse and wagon of me, and broke the wagon, and refused to pay me for it, and never has.

Re-examined by Mr. McCabe.

Question. Is not the opinion which you have expressed of his want of credibility on oath based upon his general character for truth and veracity among others outside of the business transaction to which you have referred?

(Objected to as leading.)

Answer. Certainly it is. I know the man well. I have known his general character all through life. I mentioned that as one of the reasons, of course.

BENJAMIN M. WRIGHT.

Attest:

JOSEPH ENEU, *Recorder*.

William Remick, alderman, residing at No. 543 North Third street, a witness produced and duly sworn, deposes and says:

Examined by Mr. McCabe.

Question. Are you one of the aldermen of the eleventh ward?

Answer. I am, and am one of the aldermen who took the testimony on behalf of Mr. Kline at the beginning of this year.

Question. What was the day on which Alderman George W. Williams attended at your office in the case of Kline *vs.* Verree, bringing his boxes with him?

Answer. It was on the 8th day of January, 1861, about a quarter of 4 o'clock in the afternoon, in company with Samuel L. McKinney, who carried one box, and Alderman Williams the other. The alderman desired to leave the boxes in my charge, and I refused to take them. He was not examined on that day. He departed from the office in the same manner that he came in, the alderman carrying one box, and McKinney carrying the other.

Cross-examined by Mr. Gilpin.

Question. How many times did Alderman Williams attend?

Answer. Three times, to the best of my knowledge.

Question. How many persons were present at your office when the examination began, on January 8, 1861?

Answer. From forty to fifty.

Question. How many aldermen were there, excluding yourself and Alderman Mecke?

Answer. I believe all who were mentioned in the subpoena.

Question. Do you feel sure of that?

Answer. I believe it to be so.

Question. Was Alderman Peter Hay there?

Answer. He was.

Question. How often did he attend?

Answer. Twice.

Question. Without being sent for?

Answer. I believe he was sent for.

WM. REMICK,

Alderman Eleventh Ward.

Attest:

JOSEPH ENEU, *Recorder*.

Adjourned to meet on Thursday, January 2, 1862, at 12 o'clock m.

THURSDAY, *January 2, 1862.*

Parties present and their counsel, viz: John Kline, esq., by Edward McCabe, esq.; John P. Verree, esq., by Charles Gilpin, esq.

Examination by Mr McCabe.

William C. Rice recalled.

Question. Do you know Samuel L. McKinney, and how long have you known him?

Answer. I do know him; I have known him over twenty years.

Question. Do you know his general character for truth and veracity?

Answer. I do.

Question. Is it good or bad?

Answer. Bad.

Question. From what you have heard others say of him in regard to truth and veracity, would you believe him on oath?

Answer. I would not.

Question. Did you serve a subpoena upon Samuel L. McKinney, and when, and state what occurred?

Answer. I served a subpoena upon Mr. McKinney, at Mr. Dillon's hotel, on the evening before his examination, I forget the date. He stated to me that Mr. Kline should have more sense than to subpoena him; that Mr. Kline, Mr. Painter, and Mr. Belsterling had got up an opposition against his father when he run for constable in the old seventh ward, Northern Liberties.

Cross-examined by Mr. Gilpin.

Question. Give the whole conversation you had with him when you went to subpoena him, from beginning to end; state who spoke first, and give all the conversation.

Answer. When I first presented him the subpoena, he stated to me that he had been attending on another case, and he didn't get paid for it, and he wanted no more such jobs. Alderman Williams went with me to the hotel. He says: "McKinney how would you like your furlough extended?" McKinney replied, "he did not care." Alderman Williams stated to him he would extend it until after Christmas. I then read him the subpoena, and then he made his first reply. That is all the conversation.

Question. Was he not on the stand here the next day after that conversation?

Answer. He was.

Question. Did he not state to you he had been subpoenaed?

Answer. On the evening of the conversation he came to the door and stated that Mr. Gilpin had just left; he did not state that he had been subpoenaed, but I judged he had.

Question. Did not Mr. Kline and you know that notice had been given by Mr. Verree of his examination?

Answer. No, sir; I knew nothing about it.

Question. What ward do you live in?

Answer. I live in the eleventh ward.

Question. Mr. McKinney has been an active democratic politician in that ward, has he not?

Answer. Mr. McKinney has been active in the ward, but he has been so tricky that we can hardly tell who he goes for.

Question. Explain what you say about his being so tricky.

Answer. I judge from what others say, that he goes for those that have the most money.

Question. How many years was he constable of that ward, or the ward including his residence in the old district of Northern Liberties?

Answer. He was constable for the fifth ward, Northern Liberties, for several years. I know he was constable of that ward, but can't say how often. I think he was elected constable of the eleventh ward in May, 1854; he has been most of the time since constable.

Question. Was he always nominated and elected by the democratic party?

Answer. Yes, sir.

Question. When did his father run for constable?

Answer. I think some twenty years ago.

Question. Was that the election that you and he talked about?

Answer. I think that's what he alluded to.

WM. C. RICE.

Attest:

JOSEPH ENEU, *Recorder.*

Adam Trefts, constable, 805 New Market above Brown street, Philadelphia, a witness produced and sworn, deposes and says:

Examination by Mr. McCabe.

Question. What is your business?

Answer. I am chief constable at Recorder Eneu's office.

Question. What is the residence of Mr. Joseph Eneu, recorder, before whom this testimony is being taken, and in what congressional district does he reside?

Answer. I do know him, and likewise know his residence. He resides at No. 1033 South Tenth street, below Washington avenue, in the first congressional district, second ward.

Question. In what congressional district is the office of the recorder in which we are now and have been taking testimony?

Answer. In the second district.

ADAM TREFTS.

Attest:

JOSEPH ENEU, *Recorder.*

I hereby certify that the foregoing testimony was taken before me on the several days mentioned in the record, and the several depositions were reduced to writing and attested by the respective

witnesses in my presence and in the presence of the counsel of John P. Verree and John Kline, esqrs; and I hereby return the same to the Clerk of the House of Representatives in pursuance of law. As witness my hand and seal this 2d day of January, A. D. 1862.

[L. S.]

JOSEPH ENEU,
Recorder of the City of Philadelphia.

The following is a statement of costs by me taxed against John Kline for fees of office and witnesses, viz :

William Remick, one day's attendance.....	\$0 75
William C. Rice, seven days' attendance.....	5 25
Samuel L. Lane, one day's attendance.....	75
George W. Ash, two days' attendance.....	1 50
Elizabeth Butcher, one day's attendance.....	75
George W. Williams, two days' attendance.....	1 50
Adam Trefts, two days' attendance.....	1 50
Hugh Clark, one day's attendance.....	75
James Lowry, one day's attendance.....	75
William C. Rice, serving subpœnas, mileage, &c.....	5 00
Joseph Eneu, recorder, fees, taking testimony.....	52 50

Witness is my presence and in the presence of the court of
John H. Jones and John H. Jones, Jr. and I hereby certify the
truth to the Clerk of the Court of the County of ...
At witness my hand and seal this 1st day of January, A.D. 1902.
JAMES H. JONES
Clerk of the Court of the County of ...

The following is a statement of facts as given by ...
John H. Jones and John H. Jones, Jr.:

- 1. John H. Jones and John H. Jones, Jr. are ...
- 2. John H. Jones and John H. Jones, Jr. are ...
- 3. John H. Jones and John H. Jones, Jr. are ...
- 4. John H. Jones and John H. Jones, Jr. are ...
- 5. John H. Jones and John H. Jones, Jr. are ...
- 6. John H. Jones and John H. Jones, Jr. are ...
- 7. John H. Jones and John H. Jones, Jr. are ...
- 8. John H. Jones and John H. Jones, Jr. are ...
- 9. John H. Jones and John H. Jones, Jr. are ...
- 10. John H. Jones and John H. Jones, Jr. are ...

EXHIBIT B - DEPOSITION

Witness is my presence and in the presence of the court of
John H. Jones and John H. Jones, Jr. and I hereby certify the
truth to the Clerk of the Court of the County of ...

At witness my hand and seal this 1st day of January, A.D. 1902.
JAMES H. JONES
Clerk of the Court of the County of ...

EXHIBIT C - DEPOSITION

Witness is my presence and in the presence of the court of
John H. Jones and John H. Jones, Jr. and I hereby certify the
truth to the Clerk of the Court of the County of ...

BYINGTON vs. VANDEVER.

JANUARY 6, 1862.—Referred to Committee of Elections, and ordered to be printed.

Additional papers by the contestant.

BYINGTON vs. VANDEVER.

WASHINGTON, December 26, 1861.

SIR: Will you do me the favor, on behalf of your committee, to call upon the Secretary of War for a copy of the authority which he conferred upon Hon. William Vandever to organize and command a regiment of volunteer infantry within the State of Iowa? Also to inquire of said Secretary whether he has extended Colonel Vandever's leave of absence from his regiment; and if so, for how long a period?

Very respectfully your obedient servant,

LEGRAND BYINGTON.

HON. HENRY L. DAWES,

Chairman of Committee of Elections, House of Representatives.

BYINGTON vs. VANDEVER.

WASHINGTON, December 27, 1861.

SIR: Will you do me the favor, on behalf of your committee to inquire of the paymaster general whether the name of Mr. William Vandever appears upon his pay roll as colonel of the 9th regiment Iowa volunteer infantry; and if so, how much he has received and how much is now due to him for his military services?

Very respectfully your obedient servant,

LEGRAND BYINGTON.

HON. HENRY L. DAWES,

Chairman of Committee of Elections.

BYINGTON vs. VANDEVER.

WASHINGTON, December 27, 1861.

SIR: I deem it my duty to advise your committee that at the election for representative of the second congressional district of Iowa, on the second Tuesday of October last, large numbers of votes were given for me in Scott, Cedar, Clinton, Jones, and many other counties of said district, of which I have no official authentication or recognition because of the refusal of the county canvassers of said counties to return said votes.

If, in the opinion of your committee, the ascertainment of said vote is material to a correct decision of the matters in controversy between Mr. Vandever and myself, I desire an opportunity, under an order of your committee, to prove the giving of said votes.

Please communicate to me your views in regard to this matter at your convenience.

Very respectfully your obedient servant,

LEGRAND BYINGTON.

Hon. HENRY L. DAWES,

Chairman of Committee of Elections, House of Representatives.

BYINGTON *vs.* VANDEVER.

WASHINGTON, *January 2, 1862.*

SIR: Will you do me the favor to call upon the Secretary of War for copies of the instructions which he is alleged to have sent to the governors of the States, in reference to the giving of commissions to officers of the volunteer militia entering the service of the United States for the present war?

Very respectfully your obedient servant,

LEGRAND BYINGTON.

Hon. HENRY L. DAWES,

Chairman of Committee of Elections, House of Representatives.

EXTRACTS FROM THE "CODE OF IOWA," 1851.

TITLE IV: CHAPTER 24, P. 42.

237. For the purposes of this title, the term "general election" means the election at which the members of the general assembly are regularly chosen.

What officers are to be elected, and at what elections.

239. The following officers shall be chosen at the elections herein prescribed:

1st. At the general election, the governor, the secretary, treasurer, and auditor of State, members of the general assembly, *representatives to Congress*, prosecuting attorneys, and clerks of the district courts.— (Page 43.)

In what years chosen, and their terms of service.

240. The following shall be the years of the election and the terms of service of the respective officers:

In the year 1852, at the general election, a secretary, treasurer, and auditor of State, the prosecuting attorneys, clerks of the district

courts, representatives to the general assembly, *and to Congress*, each for the term of two years; and senators in the general assembly, from their proper districts, for the term of four years.

In the year 1854, at the general election, a governor, for the term of four years.—(Page 44.)

LAWS OF IOWA: REVISION OF 1860.

TITLE IV: CHAPTER 31.

[Extracts.]

[Code—chapter 24.] This chapter was repealed by the following act:

AN ACT revising and amending title four of the code, and further providing for elections, filling vacancies in office, resignations, and contesting elections.—[Page 77.]

SECTION 459, (1.) *Be it enacted by the general assembly of the State of Iowa*, That there shall be held throughout the State, on the second Tuesday of October in each year, an election for all officers required by law to be chosen at such election, to be called the general election, except the years of the presidential election, when the general election shall be held on the Tuesday next after the first Monday in November.

SEC. 470, (12.) Members of the House of Representatives shall be chosen by the vote of the qualified voters of the respective representative districts, at the general election of one thousand eight hundred and fifty-nine, and every second year thereafter, for the term of two years, and until their successors are elected and qualified.—(Page 79.)

CHAPTER 42.

Vacancies and special elections.

SEC. 662, (429.) Every civil office shall be vacant after the happening of either of the following events, at any time before the expiration of the term of such office, to-wit:

• • • • •

8. A forfeiture of office as provided by any law of the state.—(Page 101.)

SEC. 672 (35.) Vacancies occurring in township offices, ten days; in county offices, fifteen days; and in all other public elective offices, thirty days, prior to the day of a general election, *shall be filled at such general election: Provided*, That should a vacancy occur in the office of representative in Congress, senator, or representative in the general assembly, member of the board of education, and the body in which the vacancy exists will convene in a general or extra session prior

to such election, then it shall be the duty of the governor to order a special election to fill such vacancy, to be held at the earliest practicable time, and ten days' notice of such election shall be given.— (Page 102.)

HOUSE OF REPRESENTATIVES.

BYINGTON *vs.* VANDEVER.

Claimant's brief of points and authorities, for the Committee of Elections.

GENTLEMEN OF THE COMMITTEE: There is, it is believed, no serious controversy as to the facts alleged in this case. They are: That the sitting member, Colonel Vandever, was chosen at the presidential election held within the State of Iowa in November, 1860; that he took his seat at the called session of July 4, 1861; that in August following, and more than thirty days before the general election of 1861, he entered the military service of the United States, as colonel of the ninth regiment of Iowa volunteer infantry; that he is still exercising the functions of that office; and that the claimant, Mr. Byington, was afterwards elected to the seat now occupied by Colonel Vandever, at the "general election" held within said State on the second Tuesday of October, 1861, the governor of Iowa having failed to name any other day for said election.

Upon these facts the claimant makes three principal points in the case, all of which are purely questions of law. They are—

First. That Colonel Vandever's election, in November, 1860, was unauthorized by the laws of Iowa.

Second. That if originally lawful, he afterwards *forfeited* his seat, in August, 1861, by the acceptance and exercise of a military office under the authority of the general government; and,

Third. That in either event the claimant was rightfully elected to the seat at the "general election" of 1861.

These points will be briefly considered in the order in which they have been stated:

I. The Constitution of the United States (article 1, section 4) devolves upon the legislatures of the several States the duty of providing by law for the election of members of this House. This power was exercised by the general assembly of the State of Iowa, in the year 1851, by the enactment of the 24th chapter of "*The Code of Iowa*," by which it was provided, in terms, that representatives to Congress should be elected "at the general election" of said State, which "general election" was by the same chapter defined to be, "that at which the members of the general assembly are regularly chosen."— (Pages 42 and 44.)

Under the further provisions of this same chapter, members of the general assembly were to be chosen biennially, and on the *even* numbered years thereafter.

Subsequently, a new constitution was adopted by the people of

Iowa, under the provisions of which the *time* of electing these members of the general assembly was changed, and by the legislative act of March 23, 1858, which is still in force, such members were to be "regularly chosen" on the *odd* instead of the *even* numbered years, as formerly.—(Revision of 1860, page 79.) There being in the last-named act no mention of representatives to Congress, it is insisted that this change in the time of electing members of the general assembly necessarily carried with it a corresponding change in the election of congressional representatives.

Thus it is seen that the only law of Iowa which provides for a congressional election, specifically defines such election to be that at which "the members of the general assembly are regularly chosen," which in the present case, occurred on the second Tuesday of October, 1861, and it is not even pretended that such members of the general assembly were not eligible at the election of 1860, under which Colonel Vandever claims to hold his seat.

Of the reasons which induced the legislature of Iowa, in 1851, to require that members of the general assembly and representatives to Congress should be chosen at the same "general election," and to adhere to the policy by their failure to allude to members of Congress in the election law of 1858, it is quite unnecessary to inquire, because that body, by the Constitution, is made the exclusive depository of the power, and sole judge of the manner of its exercise.

Colonel Vandever, therefore, not having been elected at a general election at which "members of the general assembly were regularly chosen," had no warrant of law for his election.

II. But, if rightfully elected, could he, in view of the subsequent facts, lawfully take his seat at the commencement of the present session? We have seen that at that time he was exercising the office of colonel of an infantry regiment, which was in the field of active service in the far distant State of Missouri.

By the sixth section of the first article of the Constitution, it is provided that "no person holding *any* office under the United States, *shall be a member of either House.*" Does Colonel Vandever deny his military office? Does he controvert the authority of the United States over his official movements? Does he acknowledge military fealty to any superior or even co-ordinate power?

Upon the disqualifying effect of a provision so sweeping and yet so explicit, it does not seem that there can be found any ground for cavil or equivocation. But all doubts which might otherwise have possibly been entertained, are completely dispelled by an emphatic legislative construction of this clause, which in effect decides that the acceptance, after an election had, of a *military* office, even in time of peace, and carrying with it neither emolument or active duty, "is incompatible with the *holding* of a seat in the House," and *operates a forfeiture of such seat.*—(Case of John P. Van Ness, of New York, contested elections, page 122.)

This case is so explicit, not only in the point decided, but in the reasons given for the decision, as to justify, here, its substantial recital.

HOUSE OF REPRESENTATIVES.

DECEMBER, 27, 1802.

Mr. Davis, of Kentucky, observed that he was of opinion that a member of the House retained his seat contrary *to the spirit and sense of the Constitution*. It therefore became his duty to offer a resolution for instituting an inquiry into the subject, in doing which, he disclaimed all personal views.

He then made the following motion :

“*Resolved*, That the Committee of Elections be, and they are hereby, instructed to inquire whether John P. Van Ness, one of the members of this House from the State of New York, returned by said State to serve as one of its members in the seventh Congress of the United States, has not, since his election as a member of this House, and since he occupied a seat as a member, accepted of, and exercised, the *office of a major of militia*, under the authority of the United States, within the Territory of Columbia, and thereby *forfeited* his right to a seat as a member of this House.”

DECEMBER, 29, 1802.

Mr. Davis having called up his resolution, Mr. Van Ness said, that so far as the decision of the House might affect him personally, he felt little concern ; but so far as it affected him as a representative of an important State, he was not so indifferent. He had no objection whatever to the proposed inquiry being made ; as it involved the decision of *an important principle*, it deserved great attention.

* * * * *

He had risen barely to state his wish that an inquiry might be made.

The resolution was then adopted without a division.

On the 11th of January, 1803, the Committee of Elections made the following report :

“That, from the free concessions and agreement of the said member, it appears to your committee that he has accepted and exercised *the office of a major of the militia*, under the authority of the United States, within the Territory of Columbia ; and that a paragraph in the sixth section of the first article of the Constitution, which expressly provides that no person holding *any* office under the United States shall be a member of either House during his continuance in office, does, in the opinion of your committee, render the acceptance and exercise of the office aforesaid *incompatible with the holding, at the same time, of a seat in the House*.

“Your committee, therefore, ask leave to submit to the House the following resolution, to wit :

“*Resolved*, That John P. Van Ness, one of the members of this House, having accepted and exercised the office of major of militia, under the authority of the United States, within the Territory of Columbia, hath thereby *forfeited* his right to a seat as a member of this House.”

JANUARY, 17 1803.

The report being under consideration in Committee of the Whole, Mr. Van Ness said he would make a remark or two that would, perhaps, remove any impressions of indelicacy, on his part, in retaining his seat, under the circumstances in which he was placed. He considered himself as standing on that floor, not as a private individual, but as a representative of New York, and as holding a trust which he was not authorized to abandon, before a constitutional decision should be made. His constituents had placed him there as the guardian of their rights ; and that trust he could not desert without a constitutional decision being made. If that decision should be adverse to his retaining his seat, in retiring from the House he should feel no regret but at leaving his constituents unrepresented during the remainder of the session ; at not having discharged all the business assigned him by the chair, and at ceasing to associate with gentlemen, who, for the most part, he respected. In a pecuniary view, the relinquishing his seat could not in the least affect him ; nor should he consider it disreputable to leave a body without any imputation of dishonor or impropriety.

The reasons he should offer to the committee for retaining his seat were few and simple. He thought the fair, liberal, and sound construction did not affect his case ; that the incapacitating provision only applied to *civil* offices. The Constitution was only a digest of the most approved principles of the constitutions of the several States, in which the spirit of those constitutions was combined. Not one of those constitutions excluded from office those who had accepted *military appointments*, except in the regular service. He therefore felt a full conviction that it was never the intention of the framers of the Constitution of the United States to exclude militia officers from holding a seat in Congress ; and however important it might be to adhere to the letter of the Constitution, yet, when the spirit of it was so clear, as it appeared to him, it ought to have weight in the decision of the question before the committee, which might affect objects of great importance. The right of every portion of the Union to a representation in that House was very important, and ought to be respected in all cases which may either directly or indirectly affect it. Gentlemen, therefore, ought to reflect before they deprive a part of the Union of this important right.

From the language of the Constitution Mr. Van Ness inferred that it was the intention of the framers of the Constitution that the restriction should apply to *civil* offices only. Gentlemen may ask, shall we, by our construction, countenance an introduction into this House of regular military officers ? But to this it may be replied that full confidence may be placed in the good sense of the people to prevent this effect. The framers of the Constitution, therefore, thought this a power that might be safely left to the discretion of the people.

The Constitution only applied to two alternative cases. An individual holding a seat in this body could not be appointed to a civil

office; and an individual holding a civil office could not, consequently, hold a seat here. This was all that it was necessary to provide for.

There was another ground. He could not conceive that such an office as he held was comprehended in the Constitution. He was not an officer of the United States, but of a district, which, locally considered, might be looked upon as an island placed in the sea. He could not think that the Constitution meant to exclude officers of dependent colonial districts.

It has been contemplated that such a colonial possession should be represented on this floor. Why, therefore, apply the exclusion to them?

One great reason of this provision of the Constitution was to prevent corruption. Where could be the danger of this from an officer without the least emolument? The inconvenience of exclusion, in such cases, too, would be glaring. Its necessary effect would be an inability to get those to accept commissions in the militia who were proper for the station.

There was another idea entitled to weight. If it be determined that the militia officers of this district shall be excluded, the same rule will apply to all militia officers appointed by the governors of the Territories of the United States. Do you not also exclude the militia officers of the States, who, though appointed in the States, are subjected to the command of the United States? A construction of the Constitution productive of such effects he considered unsound, and contrary to the intention of its framers.

Had he supposed that the acceptance of an office in the militia would have interfered with his seat in that House, he would never have accepted it. He had never entertained a doubt on this point until broached in the House. Since then he had had various opinions. By what he had heard his opinion was not changed, as he believed a true construction would not exclude his case, &c.

Mr. THOMAS said: The clause of the Constitution which has been quoted by the committee, and which is in point, declares that "no person holding *any* office under the United States shall be a member of either House during his continuance in office." It appears that my colleague did, some time in the recess of Congress, accept and exercise the office of a major of militia of the District of Columbia, under an act of Congress, and the exclusive government of the United States. This office, although trivial in itself, without emolument, and to which very little or no influence can attach, nor can it, in my opinion, have a tendency to bias his vote improperly on any question in this House, yet as I do believe it comes within the province of that clause of the Constitution, and permitting him to retain his seat may establish a precedent which *may hereafter be attended with pernicious consequences*, I conceive myself bound, in justice to myself as well as to my country, to give my vote to concur with the committee in their report.

The question was then taken on the report of the committee of elections, which was agreed to without a division.

The committee rose. The House immediately took up their report.

Mr. Randolph observed that, *on a precedent so important as was about to be established by the vote of the House*, it was unnecessary to say a word. He wished, however, that the disposition of the House to exclude, by a unanimous vote, under the shadow of Executive influence, should be recorded on their journals, for which purpose he called the yeas and nays; which were taken, and were *unanimously* in favor of the resolution.

So the seat of the said member was declared vacant.

This case decides that a *military* office is within the meaning of the Constitution; and that a majorship of the militia is such an office, even when its duties are merely nominal, and no actual service is required or pay earned or expected. It is also observed that every consideration which it was possible to urge against this construction was advanced by Mr. Van Ness, even to its anticipated application to the appointees of the State governments. And yet it was *unanimously* decided against him, and this, too, in the better days of the republic.

I have heard attempts to make a distinction between the case here cited and the one under consideration of the committee, upon the ground that Colonel Vandever was commissioned by the governor of Iowa. But this is a mere matter of *form*, whereas he is, to all intents and purposes, the military officer of the government of the United States, *doing its bidding, subject to its exclusive mandates, wearing its prescribed livery, under its absolute control, and receiving its pay*. The gist of the matter is, that these two offices, which he attempts to combine in his person are, in their essence, as well as by the Constitution, irreconcilably in conflict—totally incompatible with each other—physically impossible of execution, because he cannot legislate in Washington and fight in Missouri at the same time; and the very least that can be said of them is, *that the faithful discharge of the functions of the one, necessarily involves the entire negligence of the duties of the other*.

It was upon much higher grounds, indeed, than these, that the case of Mr. Van Ness was decided, namely, that a military subordinate of the United States Executive was, even in time of peace, an *unsuitable occupant* of a seat upon the floor of the House; and that high considerations of public policy, as well as the Constitution, forbid such a mingling of the executive and legislative functions.

To say nothing, where much could be appropriately said, of the glaring impropriety of a military officer legislating upon military exigencies and demands, (at this time paramount,) the power possessed by the House, to coerce absent members, (*Constitution, article 1, section 5,*) and the articles of war, which subject Colonel Vandever to the unconditional orders of his superior officer, *cannot both be exercised as against him without producing disastrous conflict of authorities*. In fact, his presence now here in Washington is only due to the grace of his commanding general, in the distant State of Missouri, and has been secured for thirty days only, perhaps to the serious detriment of the military service of that department.—(*See letter of General Curtis.*) Indeed, the wonder with me has been that the indelicacy, nay,

incongruity, of such a position, has not so forced itself upon the attention of my friend, Colonel Vandever, as to have induced a formal relinquishment of his seat.

It was quite unnecessary, however, that he should have resigned to produce a vacancy.—(See *Mumford's case, contested elections, page 316.*) From the moment he entered the military service of the United States, and led the ninth regiment of Iowa volunteers to the field, he became, undeniably, a "person holding an *office* under the United States," and, as such, ceased to be a lawful "member of either house;" because, as decided in the New York case, the "*acceptance* of such an office was a *forfeiture* of his seat." The language of the Constitution, as here interpreted, is self-executing, and its effects immediate, it having declared in advance that no such officer "*shall be a member*;" thus showing that the disqualification or forfeiture attaches *upon the acceptance of the office*.

There are two or three other, and possibly minor, considerations, which equally demonstrate that Colonel Vandever's case is within the clause of the Constitution above quoted; and that he is, literally, holding this military office "under the United States."

In the *first* place, the inception of his present employment was with the general government, when it issued, through its War Department, the written authority to him to raise and organize an *independent* regiment of soldiers for active service. This was a *designation* of Colonel Vandever by the United States for a specific employment, outside of the call for State volunteers; or, in other words, an appointment to an *office*.

Secondly. By a circular order to the governors of the States, requiring them to commission such fixed officers only as should be first *nominated* by the War Department, those appointments were *practically* assumed by the government of the United States, and the State executive became the mere scrivener, to fill up the commissions which had been ordained by another power.

Thirdly. In case of his dismissal, for any cause, from the service, he would thereby cease to hold his *office* of colonel of the ninth Iowa regiment, and another colonel would be nominated in his place, although *he* should carry with him to his retirement the parchment furnished by the governor of Iowa. If his dismissal, by the government of the United States, would thus vacate his *office* of colonel, clearly he can be no other than "an officer of the United States."

Practically, then, Colonel Vandever is holding this important military office, under "the government of the United States," because said government bestowed it upon him; because it directs and controls his official movements; because it pays him for the performance (or non-performance) of its duties; because it demands (or ought to demand) of him the usual benefits of such an appointment; because it holds him (or ought to hold him) to the responsibilities of the position; and because it may, at any time, terminate its tenure. If there is any other possible incident attaching to "an office of the United States," Colonel Vandever's position will be found to illustrate it in the case at bar. Upon such facts as these, who will stultify himself,

by voice or vote, in maintaining that Colonel Vandever, of the ninth Iowa infantry, now fighting in Missouri, is *not* an officer of the United States?

III. If Colonel Vandever is excluded from the House upon either of the foregoing hypotheses, is the claimant entitled to his seat?

First. I remark that if the election of 1860, by which Colonel Vandever was returned, was not authorized by the laws of Iowa, it would seem to be clear that that of 1861 was the proper election of a representative to Congress. All that need be said, therefore, upon this head is, that by a long and uniform course of decisions, an *actual election* will be recognized, though the usual certificate of election may be wilfully or negligently withheld by the executive authority of the State, for alleged irregularities. If the election of 1861, at which the claimant was chosen, was the regular election for a representative to the thirty-seventh Congress, it being, indisputably, the one at which "members of the general assembly were regularly chosen," then the claimant is properly here, whether he bears a certificate of election or not. But, if this point be determined otherwise, then—

Secondly. Had the people of Iowa the right to treat Colonel Vandever's seat as *vacant* from the 30th day of August, 1861, when he became "an officer under the United States," and to proceed to fill it at the ensuing annual election of 1861, the governor failing to name any other day? The affirmative of this proposition is maintained by the claimant, as well upon the parliamentary law as upon the statutes of Iowa. It has been objected that the governor's proclamation was necessary. But it has been frequently decided by the House that the right of representation cannot be defeated or abridged by a neglect or refusal of the State authorities to perform any directory duty incumbent upon them. It was so decided by this House no longer ago than last July, in the Oregon contested case. Thus, a refusal or neglect to declare a vacancy, or to issue a proclamation, or to decide a control within the State, or to canvass a poll, or to post a notice, or to issue a certificate, or even to pass any law for an election, has never been held to operate a defeat of the fundamental right of representation.—(See Hoge's case, contested election, p. 135; Richard's case, *ibid*, p. 95; Bird's case, *ibid*, p. 116; Oregon contested case at last session.)

Applying these familiar and oft recognized principles to the case in hand, was the claimant of this seat rightfully elected to fill a *vacancy* by the people of his district? I assume that the body of our constituency had the right to decide this seat *vacant* from the moment on which Colonel Vandever was sworn into the military service of the United States as colonel; because the Constitution, which is the supreme law in Iowa, as well as elsewhere, says to them that in such a case "*no person shall be a member;*" that is to say, he has not been a member when he accepts the office; he shall not become such; and if he has been, he shall be so no longer. The "happening" of the colonel's appointment worked a *forfeiture* of his seat, irrespective

of any executive decision upon the matter.—(Revision of 1860, page 10.) I further assume that this occurred more than thirty days prior to a general election, and that there was to be no intervening session of Congress. The legislature of Iowa then had already provided for the case by enacting (Revision of 1860, page 102) that such a vacancy “*shall be filled at the general election.*”

Why, then, was any executive proclamation necessary? Was not this legislation itself a proclamation of the day? And could any executive manifesto have changed it to any other, or more effectually have advertised it? This provision of a general law is above all proclamations, and the whole body of the people may recognize it without special directions from the governor. The forfeiture of Colonel Vandever's seat was a public *fact*, irrespective of any executive recognition, and the law will deal with it as a *fact*, however the governor may choose to ignore it; and as this vacancy, *in fact*, existed more than thirty days before the ensuing general election, the tribunal which makes alike governors and representatives had the warrant of a general law for their guide and action, and were not beholden to the governor of Iowa for special instructions in the premises. But if it *had been* incumbent upon the executive of Iowa to announce this vacancy, it was, at most, a mere directory duty, and could in no way effect a change of the lawfully prescribed day for the holding of this election, or effect the right of the people to elect *on that day*. If the seat was vacant, with or without proclamation, that was the day for filling it. The governor was, in truth, officially cognizant of this vacancy, and was urged to the performance of a supposed duty thereupon; but from some unexplained cause, being himself a candidate, neglected to publish a proclamation.

In this emergency the people of the second congressional district of Iowa turned to the law. They found a general provision that all vacancies shall be filled at the regular election preceding the time at which it is known such vacancy will happen; and another, which expressly provides that such a vacancy as this “*shall be filled at the general election,*” if no intervening session of Congress is to occur. Knowing that no such session was to occur, and therefore that no special proclamation was necessary, they took it upon themselves, under this double authority, to elect a representative in place of Colonel Vandever at “the general election” which occurred between the forfeiture of his seat as aforesaid and the commencement of the present session; and the result of their action in the premises is the application for admission of the claimant in this case.

Does the want of a proclamation under these circumstances render this election void? If it is to be so decided, against all reason and all precedent, and in derogation of the laws and of the rights of the people of Iowa, then the executive authority *may disfranchise the entire people of a State*, by a wilful refusal or heedless neglect to perform a statutory duty which is merely directory. The proposition is too monstrous to challenge argument. No governor can have any rightful power to say to his people that they must, as a consequence of his non-feasance, submit to be illegally represented or not repre-

sented at all. And yet this is the position which the executive of Iowa has assumed in this case, and such is the doctrine which the sitting member now asks the House to adopt as a precedent.

In further illustration of my views of this case, I append an authentic letter of General McClernand, late a member of the House from the State of Illinois, whose great experience and profound parliamentary knowledge will commend his opinions to the deferential consideration of the members of the House, of whom he was late a respected colleague. It reads as follows:

Letter from General McClernand.

CAIRO, ILLINOIS, October 28, 1861.

SIR : I snatch a moment from pressing military engagements to re-explain what I supposed had already been sufficiently explained.

I was aware that my name had been frequently mentioned, by kind friends, for appointment by federal authority as a brigadier general, prior to the last session of Congress; but profoundly penetrated by the danger menacing the country, as I often declared that I would not accept, even if offered, until after I had assisted in passing such laws as the emergency required.

My reason for that determination was that the acceptance of the appointment would have *vacated* my seat in Congress. It is known that the same consideration restrained the lamented Senator Baker from accepting a similar appointment, and so Senator Lane.

After Congress had voted men and money to put down the rebellion, the President, of his own motion, having tendered me a brigadier's commission, I, from an equal sense of duty, accepted it. *From that moment* I have considered my seat in Congress vacated, not only by operation of law, but by the practical incompatibility of the offices; and such was notoriously the sense of Congress in one or more similar cases at the last session.

Indeed it is a moot question whether the acceptance of a military commission from the governor of a State, carrying with it duties to be performed in a different and distant field of national service, from which there is no relief except by leave of absence, or furlough, to be granted at the discretion of the military authority, would not *vacate* the seat of the party accepting it, in Congress. This apprehension, no doubt, accounts for the instances which have occurred, of the exercise of military functions by individuals, without the acceptance of a commission for that purpose.

Upon the question of the legal effect of the acceptance of my military commission, I have obtruded no opinion either upon the executive of Illinois or any other official. It was not for me to do so. That is a question for him and all other officials whose action is to be determined by it, each to decide for himself. Having official evidence of my military character, the governor will, no doubt, decide it satisfactorily to himself. He, and not I, will be responsible for that decision. With these convictions, of course, it would be inconsistent, if not absurd, for me to undertake to *resign* an office which

I had *ceased to hold*. This folly I will not perpetrate—will not make a matter of official record among the archives of State.

Upon the consequential question of the legal virtue of an election to fill my *vacancy* made without the previous proclamation of the governor for that purpose, I can only give the opinion of a private individual.

The Constitution of the United States guarantees to the people the fundamental right of representation in Congress, and as it also makes each branch of Congress the judge of the qualifications, returns, and elections of its members, the House will determine this question for itself. *No act of omission or commission on the part of the executive, can, in my opinion deprive the people of that right, or defeat it.* Neither can any such act control the duty of the House in judging of the title of its members. With this opinion I voted with the majority of the House, at the last session of Congress, in favor of admitting the representative of Oregon to a seat, although he had been elected without sanction of a previous proclamation by the governor of that State, and without the sanction of any local law, providing for such an election; and what the House then did, unquestionably, it may do again.

Yours, &c.,

JOHN A. McCLERNAND.

Hon. N. M. BROADWELL.

Should Colonel Vandever answer this brief, I respectfully request the privilege of a reply.

LEGRAND BYINGTON.

PAPERS

THE CLAIM OF JOSEPH BEGAN

Representative of the first congressional district of Virginia in the 31st Congress.

January 6, 1861.—Read by the Committee of Elections, and ordered to be printed.

No. 603 North Capitol,
January 18, 1861.

Information having reached me from a person named J. H. Jones, who claims to have been the author of the election of a member of Congress from the first congressional district of Virginia, I have been induced to submit a brief statement of the facts and of the case, and ask as early a decision as may suit the convenience of the committee. I shall be obliged to the committee for action before the recess, if it be possible.

1st. The election was held at Hampton, the only polling place in the county of Elizabeth City which was accessible to the voters, all the rest of the district being in the military occupancy of the rebel States.

2d. Elizabeth City county is one of the counties comprising the first congressional district. The counties comprising each district are Middlesex, Westmoreland, Richmond, Essex, Northampton, King and Queen, Lancaster, Gloucester, Hertsford, James City, the City of Williamsburg, New Kent, York, Warwick, Northampton, Loudoun, and Elizabeth City.

3d. It was held under the proclamation of Governor Pierpont, of which a copy, taken from the *National Intelligencer* of the 17th of October, is appended, as follows:

JOSEPH SEGAR.

P A P E R S

IN RELATION TO

THE CLAIM OF JOSEPH SEGAR

AS

A representative of the first congressional district of Virginia in the 37th Congress.

JANUARY 6, 1862.—Referred to the Committee of Elections, and ordered to be printed.

No. 465 NINTH STREET,
December 18, 1861.

Indisposition having prevented me from appearing before the committee to bring to its notice the subject of the election of a member of Congress from the first congressional district of Virginia, I beg leave to submit a brief statement of the facts and law of the case, and on it to ask as early a decision as may suit the convenience of the committee. I shall be indebted to the committee for action before the recess, if it be possible:

1st. The election was held at Hampton, the only precinct in the county of Elizabeth City which was accessible to the voters, all the rest of the district being in the military occupancy of the rebel States.

2d. Elizabeth City county is one of the counties composing the first congressional district. The counties composing such district are Middlesex, Westmoreland, Richmond, Essex, Northumberland, King and Queen, Lancaster, Gloucester, Matthews, James City, (the City of Williamsburg,) New Kent, York, Warwick, Northampton, Accomac, and Elizabeth City.

3d. It was held under the proclamation of Governor Pierpoint, of which a copy, taken from the National Intelligencer of the 17th of October, is appended, as follows:

THE COMMONWEALTH OF VIRGINIA.

EXECUTIVE DEPARTMENT, *Wheeling, October 12, 1861.**To the People of Virginia:*

Whereas several of the congressional districts of this State are unrepresented in the House of Representatives in the Congress of the United States, by reason of failure to elect on the fourth Thursday in May last, caused by armed men in rebellion against the Constitution and laws of the United States and of this State; and it being the right of the loyal inhabitants in each district to be represented in said House by a representative of their own appointing, the convention of Virginia, on the 20th day of August, 1861, passed an ordinance directing an election to be held on the fourth Thursday in October instant, (24th,) in every district of the State so unrepresented and where vacancies exist. It is further made the law, by virtue of the ordinance aforesaid, that any person who is prevented from attending such election, by reason of the occupation of his own county by armed men in hostility to the government, that such voter may vote anywhere in his congressional district. It is further ordained that the election shall be conducted, and the result ascertained, declared, and certified, in the manner directed in the code of Virginia of the edition of 1860. By the 11th section of chapter 7th of that code any two freeholders may hold an election directed by law at any place of voting, if no commissioner to superintend the same appears and is willing to act, or if no commissioners have been appointed to hold the election.

Now, therefore, in consideration of the premises, I, Francis H. Pierpoint, governor of the Commonwealth of Virginia, do hereby entreat the loyal voters of this State to hold elections in their several districts on the day above mentioned, to the end that the people may be represented, the principle of representative government sustained, and the State have her due weight in the national legislature.

F. H. PIERPOINT.

4th. The polls were opened by two freeholders, in the absence of commissioners, as allowed by law, and as advised in the governor's proclamation.

5th. The commissioners, (the two freeholders,) and the writer and conductor at the polls, made return that I received all the votes cast, and that having received all the votes cast, I am "duly elected to represent the first congressional district in the Congress of the United States." They certify, also, that no election was held elsewhere in the district.

6th. The act of the code of 1860 expressly provides that the officers conducting the election shall "*declare elected the person having the greatest number of votes in the whole district.*" The foregoing quotation is the exact wording of the law.

On these facts the question comes up, am I entitled to a seat in

the House of Representatives of the United States? I maintain that I clearly am.

First. The government ordained by the Wheeling convention is the rightful, legal government of Virginia.—(See *Luther vs. Borden*, 7th Howard, p. 1.) In which the Supreme Court decided that where there are two governments claiming to be such within a State, that is the legal, rightful one which is recognized by the federal executive. Now, the Wheeling government *has* been so recognized, and is therefore *the* government of Virginia. I maintain that this is right, because the *loyal* citizens of Virginia are *the people* of Virginia, in the sense political. Besides, Congress has recognized the Wheeling government by admitting two senators and four members of the House of Representatives under the Wheeling government. And this concludes the legal question.

Secondly. The Wheeling government being the legal one, Governor Pierpoint, acting under the laws of that government, acted legally in issuing his proclamation, and an election held under it is a legal election.

I see but one objection to these conclusions, and that is, that the vote is a small one. To this I reply:

First. That the *number* of votes, so it be the greatest number of the votes cast, is altogether immaterial, because the laws of Virginia provide that *he* shall be regarded elected who has the greatest number of the votes given. And the presumption of reason and of law is, that those *not* voting are presumed to have acquiesced, either by choice or necessity, in the action of those that *did* vote.

Secondly. That the House of Representatives has admitted gentlemen to seats who received a most inconsiderable portion of the whole vote of their respective districts, as in the cases of Mr. Whaley and Mr. Upton.

Thirdly. In these revolutionary times of civil war and fierce and wicked rebellion, a broad liberality, not a narrow rigor, should be observed. How otherwise are the loyal people of Virginia and other States similarly situated, to be represented at all? I maintain, with all respect, that wherever it can possibly be done, the loyal people of the seceding States should be represented in the national councils. They have rights and interests in the federal Union which should not be forfeited by the omissions or commissions of the disloyal and rebellious. It would be indeed a hard case, such, I am sure, as Congress will scarcely make for them.

I deem it due to myself to state that I knew nothing of the election in my district until after it had taken place. An exile from my State and family and home, I was at the time in Boston, or at some other point in New England, hoping to cheer the gloom of banished hours by visiting a section of our common country I had never seen before, and learning something of a portion of my countrymen of whom I personally knew but little, towards whom I had never learned to cherish a prejudice, and of whom I was desirous to know more.

Nor did I determine to accept the proffered honor until my doubts as to the legality of the election (which were grave and hard to be

removed) had been dispelled by the lucid arguments of several eminent legal gentlemen of Boston, who were pleased to manifest an interest in my possession of the seat. And now, after the most virulent denunciation, and most contumelious and heartless abuse from the press and people of my native State, for the part I have taken in this and other matters connected with this unhappy conflict, I have resolved to meet the momentous responsibilities of the occasion, and if the House of Representatives shall choose, give my aid and co-operation, so far as an humble capacity and a full-hearted devotion to the Union will go, in crushing out the wickedest treason recorded in the history of man, and restoring the blessed Union of our fathers. A portion of the loyal people of my *district*—once my neighbors—themselves, in my absence far away, thought fit to open a poll for me, and, as I think, duly elected me their representative in Congress. I desire to carry out their loyal wishes. I covet the honor and the glory of representing them, few though they be, in the House of Commons of the Union; and if but one loyal voter had gone to the polls and voted for me, that one loyal voter I would be proud to represent, as in law I should be entitled to do.

When the case shall be taken up in committee, I shall be happy to make such explanations as may be required, and will then furnish the return of the officers of election, and such laws as may be needed in the premises.

I have the honor to be, very respectfully, your obedient servant,
JOS. SEGAR.

Hon. H. L. DAWES,
Chairman Committee of Elections.

Poll opened at Hampton, in Elizabeth City county, State of Virginia, for the election of a member of Congress for the 1st congressional district of Virginia, on the 24th day of October, 1861, in pursuance of a proclamation of Francis H. Pierpoint, governor of Virginia, bearing date the 12th day of October, 1861.

JOSEPH SEGAR AND W. W. JACOBS.

Names of voters.	CANDIDATES.	
	Segar.	Jacobs.
J. S. Moody	1	.....
K. Whiting	1	.....
Harvey Robbins	1	.....
William Stacy	1	.....
William Howell	1	.....
Levi Dinno	1	.....
Henry House	1	.....
Henry Whitaker	1	.....
Thomas Watson	1	.....
Parker Millson	1	.....
John Sharwood	1	.....
William J. Burdick	1	.....
M. R. Muzzey	1	.....
Jacob Miller	1	.....
John Watson	1	.....
James E. Howell	1	.....
S. Kelley	1	.....
James Latimer	1	.....
Willis Wilson	1	.....
William Bartlett	1	.....
Sol. D. Myston	1	.....
Samuel Watson	1	.....
John McCunn	1	.....
Theodore Tennis	1	.....
Thomas Dobbins	1	.....

We, Alexander Worrall, conductor and writer, and Thomas Dobbins and T. S. Tennis, freeholders of the county of Elizabeth City, acting as commissioners of election in pursuance of the act of assembly, and in the absence of commissioners required by law to be appointed by the county court of said county, (which said court has not assembled for several months in consequence of the existing war,) having been duly sworn and qualified according to law, do hereby

certify that the foregoing is a correct poll of the votes taken at Hampton, the court-house precinct of Elizabeth City county, in the State of Virginia, for an election of a member of Congress for the first congressional district of the State aforesaid; and that at said election Joseph Segar, of Elizabeth City county aforesaid, received all the votes cast as per poll aforesaid; and we do further certify that there was no poll opened at any other precinct in said county, and that so far as we can learn and confidently believe, there was no poll opened or election held for member of Congress in any other county or city or town of said first congressional district, owing to the fact that all the other counties and elector precincts of said congressional district were, on the 24th day of October last, within the lines and under the influence and control of the seceding and rebel States; and we do further certify that at the election held in pursuance of the proclamation aforesaid, at Hampton, on this 24th day of October, 1861, in the said county of Elizabeth City, which is one of the counties composing the first congressional district of the State of Virginia, Joseph Segar, esq., having received all the votes polled, was duly elected to represent the said first district in the Congress of the United States.

Given under our hands and seals this 29th day of October, 1861.

ALEXANDER WORRALL. [SEAL.]

THOMAS DOBBINS. [SEAL.]

T. S. TENNIS. [SEAL.]

CHINCOTEAGUE ISLAND, *December 11, 1861.*

A special election was held this day, under the provincial law, to elect a member of Congress to represent Accomac and Northampton counties, including Chincoteague and Assateague islands:

For member of Congress—JOSEPH SEGAR.

Charles S. Jester

Charles E. Babbitt

Robert Watson

Kendal Mungar

Richard Carter

C. W. Lofland

Revel Carpenter

Wm. T. Tatham

Joshua W. Reid

James H. Loan

John Beeley

John W. Marshal

John W. Watson

William S. Thornton

Charles W. Bradford

William J. Clanille

James T. Burch

Leonard P. Pruitt

Daniel Burch

Dr. James A. Hudson

Parker Bowden, sr.

George L. Bowden

Miles B. Thornton

Wm. P. Thornton

Wm. H. Watson

Daniel Wheatton

Kendal Thornton

William Mason

James Thornton

James Pointer

William Townsend

Parker Thornton

Burton Jones

Henry Pruitt

Thomas Sneed
 James Jester
 William Jester, jr.
 William T. Lewis
 John E. Lewis
 William B. Bowden
 James Mason, sr.
 John W. Sharpley
 Dr. Geo. N. H. Scherer
 John Reid
 Wm. M. Freeman
 Joshua Chericks
 Zadock Carter
 Henry Hopkins
 Isaac Daisey
 Samuel Mathews
 James M. Sneed
 Robert Sneed
 David Daisey
 William Daisey, jr.
 William Andrews
 William Buck
 William Daisey, sr.
 Crippin Bowden
 George Clanille
 William F. Burch
 Kendal Jester
 Edward Hall
 Isaac I. Jones
 David Lewis
 Daniel I. Sharpley
 Joshua Burch
 George Burch
 William W. Sharpley
 John Hill
 Daniel Chericks
 Littleton Hill
 Levin Townsend
 Henry Boston
 Thomas Cullin
 James Dalley
 James Daisey, sr.
 James Daisey, jr.
 Inory Bowden
 Timothy Hill
 John Booth
 James T. Miers
 Charles Bradford
 John Sneed
 Joshua Wheatton
 Thomas Melvin

Samuel Melvin
 Ivory Melvin
 Elijah Russel
 John Lewis, of E.
 Daniel Lewis, of J.
 Henry Clanille
 Michael Chericks
 James Pain
 Isaac Jester
 Selby Jester
 Thomas Burch
 Henry Burch
 John Burch
 Joseph Burch
 James Burch
 Elijah Blocksome
 Joseph Andrews
 Isaac Andrews
 James Chericks
 Theodore Young
 Selby Williams
 John Thornton
 Littleton Williams
 William Booth
 William Porter
 John Daisey, jr.
 William Adams
 William Jester
 John Russel, jr.
 Luke Lewis
 John Wheatton
 John Caulk
 Elea. Jester
 Richard Blocksome
 Thomas Hall
 George Hall
 James Cluff
 William Risley
 John Daisey, sr.
 John Russel, sr.
 Alfred Lewis
 Richard Reynolds
 John A. M. Wheatton
 John Tarr
 Parker Thornton
 Crippin Bowden, jr.
 Arthur Latherbery
 Andrew Stubbs
 John Jones, of Assateague
 island
 Edward Jones.

CHINCOTEAGUE ISLAND, *Virginia*.

In pursuance of an election held on Chincoteague island, on Wednesday, the 11th day of December, 1861, under the provincial law, for the purpose of electing a member of Congress of the United States, at Washington—

We, the undersigned, having been chosen or appointed as judges of said election, after being duly sworn according to law, do say on our oath that all the voters whose names are attached to this paper, or election roll, are, according to the best of our knowledge, legal voters and residents of this island and Assateague island, which we solemnly affirm or swear, so help us God.

We also swear or affirm that 136 of the within named votes were cast for Joseph Segar, (now, or formerly, of the town of Hampton, near Fortress Monroe, Virginia,) for member of Congress, to represent Accomac and Northampton counties, including Chincoteague and Assateague islands, Virginia.

JAMES A. HUDSON.

WM. W. ^{his} + SHARPLEY, JR.

REVEL ^{mark.} + ^{his} CARPENTER.
^{mark.}

Witness to the last signatures—

LEWIS W. LAW.

JOHN CAULK, government officer, conducting the election.

By the governor.—A proclamation.

Whereas the people of Virginia, in convention assembled at Wheeling, on the 20th day of August, 1861, did ordain, "that in every congressional district where, from any cause, an election of representative in the Congress of the United States was not held on the fourth Thursday in May last, an election for such representative shall be held on the fourth Thursday in October next, which shall be conducted, and the result ascertained and certified in the manner directed in the second edition of the code of Virginia."

And whereas, in pursuance of said ordinance, an election was held in the first congressional district of Virginia, composed of the counties of Middlesex, Westmoreland, Richmond, Essex, Northumberland, King and Queen, Lancaster, Gloucester, Matthews, James City, the City of Williamsburg, New Kent, York, Warwick, Northampton, Accomac, and Elizabeth City, on the twenty-fourth day of October, 1861, at which a majority of the votes cast were given for Joseph Segar, esq.:

Now, therefore, I, Francis H. Pierpoint, governor of the Common-

wealth of Virginia, do declare, by this my proclamation, the said Joseph Segar, esq., duly elected to represent the first congressional district of Virginia in the thirty-seventh Congress of the United States of America.

Given under my hand and the great seal of the Commonwealth, at Wheeling, this 20th day of December, in the year of our Lord [L. s.] one thousand eight hundred and sixty-one, and in the eighty-sixth year of the Commonwealth.

FRANCIS H. PIERPOINT.

By the governor:

L. A. HAGANS,

Secretary of the Commonwealth.

H. Mis Doc. 29—2

THE PUBLIC PRINTING.

LETTER

FROM THE

SUPERINTENDENT OF PUBLIC PRINTING,

IN ANSWER TO

A resolution of the House relative to the printing of certain documents.

JANUARY 10, 1862.—Referred to the Committee on the Public Printing, and ordered to be printed.

OFFICE OF SUPERINTENDENT OF PUBLIC PRINTING,
Washington, January 9, 1862.

SIR: In response to the resolution of the House making inquiry why certain documents ordered to be printed by the 36th Congress had not been delivered to the superintendent of the folding-room, I have the honor to state that the printing was done by the printers of each house, respectively, during the superintendency of my predecessor.

The facts, as I learn from those who did the printing, are, that the printed sheets were delivered to the binders for the House, who, on their part, say that some of the signatures fell short of the proper number, thus causing imperfect copies (which were not, therefore, bound) to the extent named in the statement of the superintendent of the folding-room.

Very respectfully,

JOHN D. DEFREES,
Superintendent of the Public Printing.

Hon. G. A. GROW,
Speaker of the House of Representatives.

THE PUBLIC PRINTING

LETTER

1899

SUPERINTENDENT OF PUBLIC PRINTING

to the Honorable

A resolution of the House relative to the printing of certain documents.

Passed by the House of Representatives, June 15, 1899.

OFFICE OF SUPERINTENDENT OF PUBLIC PRINTING
WASHINGTON, D. C.

That in response to the resolution of the House making inquiry why certain documents ordered to be printed by the 55th Congress had not been delivered to the Superintendent of the Public Printing, I have the honor to state that the printing was done by the printers of each house, respectively, during the superintendency of my predecessor. The fact, as I learn from those who did the printing, are, that the printed sheets were delivered to the printers for the House, who, on their part, say that some of the signatures tell about the proper number, these causing imperfect copies (which were not, therefore, bound) to the extent named in the statement of the Superintendent of the Public Printing.

Very respectfully,

JOHN D. DEVEREUX,
Superintendent of the Public Printing.

Hon. G. A. Goss,
Speaker of the House of Representatives.

COLONIZATION OF FREE BLACKS.

MEMORIAL

OF

LEONARD DUGGED, GEORGE A. BAILEY,

AND

240 other free colored persons of California, praying Congress to provide means for their colonization to some country in which their color will not be a badge of degradation.

JANUARY 16, 1862.—Laid on the table, and ordered to be printed.

*To the honorable Senate and House of Representatives of the United States
in Congress assembled :*

This memorial of colored persons, natives of the United States, and residents of California, respectfully sheweth :

That in view of the many disadvantages which the colored population of the United States labor under—their being deprived of many of the most important privileges of citizenship, and denied the rights and franchises freely extended to all other native-born citizens, and also to every other class of aliens ; their being marked out, not only by law, but also by public sentiment, which is stronger or more effective than law, as an inferior and degraded caste, prevented by the force of circumstances from engaging in honorable or lucrative employments, thus being in a great measure prevented from leading a life either honorable to themselves or useful to their country—a strong and rapidly increasing feeling has grown up among a large portion of the free colored population (probably already a majority of the whole) in favor of emigration to those countries where color is not considered a badge of degradation, and has ceased to act as a barrier to honorable advancement.

While there is considerable diversity of opinion as to the best location to migrate to, some preferring Africa, some the British West India Islands, some Hayti, some South America and Central America, they all seem to agree that either is preferable to remaining under the disabilities imposed upon them in the land of their birth, and a very large majority look upon the first and last named regions, Africa

and Central America, as offering greater inducements than any other localities to the industrious emigrant. We therefore pray your honorable body to grant assistance, in such manner as you may deem expedient, to colored natives of the United States who may desire to emigrate to Africa or the tropical regions of America.

Your memorialists think that there are many good and sufficient reasons for granting such assistance, and ask permission to call your attention to a few of them.

It seems to be the settled policy of the nation, as evinced in the action of both the State and federal governments, to discountenance in every manner the increase of persons of color in their midst, and to use every legal means to induce those now here to emigrate; and there is probably no one point on which the public sentiment of every section of the country and of every class of society is so perfectly unanimous as upon this; and legislation of the severest kind has been resorted to in many of the States, both north and south, in order to promote that end. It is not the intention of your memorialists to call in question the wisdom or justice of those laws, but we may be allowed to remark that they seem to have failed entirely of the desired effect, although the white population are almost unanimously in favor of the separation they are designed to effect, and a very large majority of the colored population also. The failure to accomplish what all classes so ardently desire may be attributed to the fact that the wishes of the blacks themselves have been disregarded, and that those acts have appeared to them as measures of coercion, which it seems an instinct of human nature to resist. This accounts also for the singular state of things visible in the history and management of the American Colonization Society: while it has sought almost exclusively to propitiate the favor of the whites, and has succeeded to an unprecedented degree in securing the approbation of men of all parties, sections, and denominations, it has only been enabled, after forty years of constant effort, to plant some ten or twelve thousand blacks in Africa; while within the same period two or three times that number of fugitive slaves have made their escape, and colonized themselves in the comparatively bleak and uncongenial region of Canada. These things show that any scheme of emigration, to be successful, must be such as to commend itself to those most interested, the colored people themselves.

Your memorialists believe that the true interests of both white and black require a separation of the races; for whatever may be the difference of opinion in regard to retaining those held in slavery, all must agree that a class of persons placed in the anomalous condition that the free blacks occupy are detrimental to the best interests of the country; and any feasible plan for their removal, and the separation of such antagonistic elements, is well worthy of aid and encouragement from government. There is strong desire on the part of many to settle in Central America and in Africa immediately, and they are retarded only by lack of the pecuniary means necessary to make a successful commencement. Your memorialists believe that small appropriations, judiciously expended, will insure the success of

the first emigrants, and speedily build up a voluntary emigration that will embrace the greater portion of the free colored population. If such a desirable consummation can be reached by a little assistance and encouragement from government, it is well worth while for government to grant that aid. It cannot be doubted that the interests of both whites and blacks demand the separation. A large class of men freed from servile restraint, yet denied most of the privileges and rights of citizens—personally free, and living in the midst of a people enjoying the largest political and social freedom, yet prevented by insurmountable barriers from any participation in that freedom—are in the worst condition possible to place men, and must be detrimental to the best interests of the community among whom they are so misplaced; and when a separation can be effected without the commission of a great wrong or injustice, and by mutual consent, the interests of the community require that it should be done as speedily as possible, so that their places may be filled with those capable of becoming incorporated with the great mass of citizens.

We approach your honorable body, therefore, with confidence that the justice and reasonableness of our prayer will recommend it to your favorable consideration; more especially as it has been the settled policy of the government to remove those classes of inhabitants who are incapable of becoming incorporated with the mass of the population, as instanced in the numerous tribes of Indians, many of whom have been removed at government expense, and granted small annuities in their new homes to aid and encourage them to make progress in civilization; and this, too, in view of the fact that those Indians have generally been hostile and at war with the United States, while the negro has been a faithful and trusty servant, and in many instances has received his freedom as the reward of faithful services. Your memorialists would respectfully suggest that a faithful servant is entitled to at least as much consideration as a bitter enemy, and a sum equal to that appropriated for the removal and annuities of Indians would doubtless be amply sufficient for every purpose; and there can be no question but that it would be productive of more benefit to the country and to the civilized world, as it would be devoted to the development of a race which does not dwindle before the march of civilization, but is industrious, and has proved itself susceptible of every improvement.

Taking it for granted that the interests of both parties require this separation, we think Africa and the great interoceanic routes through Central America the most desirable locations, for various reasons, among which may be mentioned the fact in relation to Africa, that the history and experience of Liberia and Sierra Leone demonstrate that such settlements or colonies are the only feasible means for effectually suppressing the African slave trade—a trade which the United States government was the first to interdict to its citizens and brand as piracy. To which may be added the fact that three centuries of abortive efforts on the part of various powers of Christendom to subdue and colonize the African continent, as America was subdued and colonized, furnish a demonstration that the only

feasible way to introduce Christianity and the improvements of modern civilization to the populous regions of the interior is by establishing settlements or colonies of this kind, composed of persons of kindred race, with whom the natives can become identified as fast as they attain the necessary qualifications; and thus a new, rich, and extensive field may be opened to the trade and commerce of the manufacturing and maritime nations. Among the inducements offered by Central America may be mentioned the fact that many could be more readily induced to go from its ease of access and the regular and speedy manner in which constant communication can be kept up through steam navigation with friends at home. Leaving out of view the benefits which would accrue to the emigrants and to the country whose resources they would help to develope, it is evident that the United States would gain important advantages from having on those important thoroughfares so large a number of the only portion of her population who are likely to stand the climate or be acceptable to the native inhabitants.

For these and many other weighty considerations which might be mentioned, we pray your honorable body to grant such pecuniary aid and encouragement as you may deem advisable to promote the emigration of free colored resident natives of the United States to Africa or the tropical regions of America; and your petitioners will ever pray.

Leonard Dugged
George A. Bailey
Henry E. Worke
L. A. C. Young
Edward D. Vincent
William Coffee
John Coffee
Adolphus F. Wells
Noah Dixon
Charles Handy
David Wills
W. F. Dover
Wm. T. Nicholass
J. M. Whitfield
J. J. Pindell
A. P. W. Pindell
Richard Trotter
John Cooper
S. Cooper
E. Cooper
William Hilton
William Robinson
William Hyer
Samuel Hyer
Robert Hyer
Lott Henderson

C. Henderson
C. H. Johnson
U. Dixon
John Campbell
Henry Carter
Robert White
Leonard Foster
Benjamin Tate
J. Tate
M. Scott
Ritchie Scott
N. Logan
Charles H. Delvecchio
A. M. Talbot
Robert Talbot
Thomas Posey
Abdallah McAlfrey
Simon P. Clark
M. E. Clark
L. Washington
B. C. Taylor
K. C. Sparks
Charles G. Tash
Daniel C. Bucker
John H. Jones
John Carter

Wellington C. Parick
 George B. Patrick
 James Underwood
 William Underwood
 James Underwood
 William Bell
 S. T. Bell
 James B. Sullivan
 James C. Worthington
 Henry Storum
 Peter Anderson
 Richard Schofield
 Samuel Brown
 Samuel Grooms
 Randall Cesar
 J. Holland Townsend
 William H. Newby
 John Plummer
 Reuben Taylor
 Henry Jackson
 Henry Quonn
 George C. Miller
 Henry Dangerfield
 H. N. Jones
 M. R. Campbell
 R. M. Robinson
 Loyd Howard
 William Ellis
 Richard R. Jones
 John C. Wilson
 R. Boardley
 Silas Baker
 E. A. Baker
 P. L. Dalton
 Henry T. Jones
 Richard Phillips
 William Philips
 James Phillips
 Timothy Phillips
 M. S. Phillips
 Benjamin Coger
 Cornelius Cogan
 L. Phillips
 S. S. Queen
 Charles P. Queen
 Owen W. Brown
 Columbus Sewell
 David Vincent
 John Scott
 James Wineberry

Henry Joseph
 Henry Bailey
 L. Bailey
 L. B. Hill
 Edward P. Dupler
 G. R. Lymes
 James Butler
 James Cozzens
 James B. Barker
 Robert Talbot, jr
 F. Whitfield
 Joseph Whitfield
 J. Daver
 M. Manuel
 Washington Dill
 George B. Williams
 Samuel Johnson
 Alexander Williams
 R. M. McCulloch
 S. M. Anderson
 M. J. Coffee
 S. R. Coffee
 E. M. Wilhelm
 Peter Wilhelm
 James Anderson
 Edward Flamer
 Charles Holland
 Edward Johnson
 Isaac Joseph
 Henry Murphy
 Charles Brown
 M. H. Taylor
 William Taylor
 Benjamin Robinson
 Peter Lee
 Peter Crouch
 Daniel Mills
 M. K. Cozzens
 Martin Gaines
 William Bird
 Charles J. Graham
 William Holmes
 William Qualls
 A. D. Qualls
 George Dover
 Marshall Sedgwick
 William Scott
 Henry Scott
 Moses Burton
 John T. Jones

John H. Butler
 Edwin S. Ward
 Louis A. Kelley
 Joseph Wood
 James G. Wayne
 Nathaniel Cristopher
 Robert M. Tidball
 Richard Stokes
 Samuel Cuney
 Isaac Johnson
 Richard Isaacs
 Henry Dixon
 Thomas Detter
 Ralph Williams
 Green Givings
 S. Overson
 M. Overson
 L. Johnson
 M. A. Griffin
 A. S. Gale
 Stephen Gale
 Benjamin B. Young
 Albert Smith
 Charles Postle
 A. Reagan
 C. Reagan
 Charles Bell
 Henry Ankler
 D. L. Parker
 William H. Foote
 M. Parker
 C. K. Frost
 Henry Frost
 Henry C. Coffee

Alexander Lamon
 Truman P. Hill
 M. J. Johnson
 A. E. Johnson
 H. Johnson
 J. Taylor
 William H. Yates
 William Holmes
 H. H. Graham
 M. A. Cobbs
 M. C. Moxley
 S. A. Gale
 Richard Saunders
 Thomas Saunders
 Charles Gaines
 Edward Harmer
 Thomas Harmer
 John J. Hall
 Richard Chapman
 Reuben Taylor
 Cornelius Butler
 Hope Butler
 Sanford Ritchie
 Charles Sanford
 Henry T. Johnson
 Leonard Grass
 Richard Turner
 John Mitchell
 James Bell
 Wm. A. Jackson
 Lewis Gross
 Samuel Waggnar
 John Boardly
 James C. Jackson.

Office of the Secretary of the Interior,
Washington, D. C.
January 10, 1891.

DEPARTMENT OF THE INTERIOR
TO THE SECRETARY OF THE INTERIOR

LETTERS

SECRETARY OF THE INTERIOR.

Enclosed for the Secretary of the Interior is the report of the
Commissioner of the General Land Office, dated January 10, 1891.

Very respectfully,
J. M. Smith

Secretary of the Interior
January 10, 1891.

The enclosed report of the Commissioner of the General Land Office
contains a statement of the progress of the work of the Department
during the year 1890. It also contains a statement of the
amount of land sold, and of the amount of land reserved for
the use of the Government. The report also contains a statement
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the use of the Government.

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and of the amount of land reserved for the use of the Government.

PENITENTIARY BUILDINGS.

[To accompany bill H. R. No. 221.]

LETTERS

FROM THE

SECRETARY OF THE INTERIOR,

IN RELATION TO

The occupation of the penitentiary buildings in the District of Columbia as a place of storage for ammunition and other materials of war.

JANUARY 17, 1862.—Ordered to be printed.

DEPARTMENT OF THE INTERIOR,

January 14, 1862.

SIR: I have made some inquiries in reference to the condition of the penitentiary of the State of Maryland, and, from such information as I have been able to obtain, I think arrangements cannot be made to transfer the prisoners of this District there. It is probable that such arrangements can be made with the penitentiaries of Pennsylvania or New Jersey. It might be well to contract with different institutions and divide the prisoners. It may be necessary to obtain authority from the legislatures of the States, which I presume can be readily obtained.

I send you, herewith, a draft of a bill which would effect the object. I have limited the cost to the United States per head for keeping the prisoners during the last year. It may be done for less, but I have not as yet been able to obtain such information as will enable me to decide that point.

The War Department is very urgent that the buildings shall be surrendered for the purposes of an arsenal, and insists that unless it is done new buildings, for that purpose, must be erected.

While the buildings are unfit for the purposes of a prison, they are well adapted to the storage of arms and ammunition, and, from their close proximity to the arsenal, they can be very advantageously used for that purpose; and I think the arrangement proposed can be made

with decided advantage to the government, to be continued until it shall be thought expedient to erect new and suitable buildings for a penitentiary.

I have the honor to be, very respectfully, your obedient servant,
CALEB B. SMITH, *Secretary.*

Hon. CHARLES R. TRAIN,
*Ch'n Com. Public Buildings and Grounds,
House of Representatives.*

ORDNANCE OFFICE,
Washington, January 6, 1862.

SIR: The commanding officer of the Washington arsenal has, on several occasions, represented the insufficiency of the storage room at that place. The absolute necessity of keeping on hand large supplies of ammunition and other materials of war requiring careful storage and shelter, calls urgently for the adoption of some measure to secure, at least, the temporary use of additional buildings adjacent to the arsenal. By far the most, if not the only, convenient and suitable building for the purpose, is that now used as a penitentiary, and situated within the limits of the arsenal grounds. It is suggested that other arrangements for taking care of the convicts may be made of a temporary, or probably to greater advantage, of a permanent character, whereby the penitentiary may be made available for arsenal purposes.

In view of the present importance of the matter, I respectfully call attention to this suggestion, with the recommendation that measures be taken for an examination of the subject in the proper quarter, and the adoption of such measures, either legislative or executive, as may be considered best to attain early action in the case.

Very respectfully, your obedient servant,

JAS. W. RIPLEY,
Brigadier General.

Hon. SIMON CAMERON,
Secretary of War.

[Indorsed]

Respectfully referred to the honorable the Secretary of the Interior
Could not the prisoners be transferred, for the present, to the Maryland penitentiary at Baltimore?

SIMON CAMERON,
Secretary of War.

WAR DEPARTMENT, *January 6, 1862.*

DEPARTMENT OF THE INTERIOR,
January 8, 1862.

SIR: I enclose herewith copies of letters from General Ripley, chief of the Ordnance department, and from the Secretary of War, in reference to the occupation of the penitentiary buildings as a place of storage for ammunition and other materials of war.

As this department does not possess the power to transfer the prisoners, as suggested, I present the subject for your consideration, with a view to invite such legislation as may be necessary to effect the object, if it shall be deemed proper to comply with the request of the War Department.

Very respectfully, your obedient servant,

CALEB B. SMITH,
Secretary.

Hon. CHARLES R. TRAIN,
*Chairman of Committee on Public Buildings,
House of Representatives.*

CONTINGENT EXPENSES OF THE HOUSE OF REPRESENTATIVES.

LETTER

FROM THE

CLERK OF HOUSE OF REPRESENTATIVES,

TRANSMITTING

A statement of the contingent expenses of the House of Representatives.

JANUARY 20, 1862.—Laid on the table, and ordered to be printed.

OFFICE HOUSE OF REPRESENTATIVES,

January 1, 1862.

SIR: In obedience to a resolution of the House of Representatives, passed on the 4th of March, 1842, which requires "that the Clerk deliver to the postmaster of the House such kind and quantities of stationery as from time to time may be necessary for the use of the House, keeping an accurate account of the same, and also of the quantity and value of that used in the Clerk's office; and that hereafter, in annual reports now required by law to be made by the Clerk, showing the amount of expenditure from the contingent fund of the House, he be required to state, accurately and distinctly, the quantity and cost of the stationery used by the House and the Clerk's office separately;" and also, in obedience to the second section of the act entitled "An act legalizing and making appropriations for such necessary objects as have been usually included in the general appropriation bills without authority of law, and to fix and provide for certain incidental expenses of the departments and offices of the government, and for other purposes," approved August 26, 1852, which requires that the Clerk of the House of Representatives report to the House a detailed statement of the manner in which the contingent fund of the House has been expended, giving the names of every person to whom any portion thereof has been paid, and if for anything furnished, the quantity and price, and if for services rendered, the nature of such service, and the time employed, and the particular occasion or cause, in brief, that rendered such service necessary, and the amount of all former appropriations, in each case, on hand, either in the treasury or in the hands of any disbursing officer or agent—I have the honor to make the following report, contained in papers marked A, B, C, and D.

Respectfully,

EM. ETHERIDGE,

Clerk of the House of Representatives.

HON. GALUSHA A. GROW,

Speaker of the House of Representatives.

CONTINGENT EXPENSES OF

A.

Detailed statement of disbursements by the Clerk of the House of Representatives of the United States, for the year ending December 1, 1861.

To whom paid.	For what object.	Amount.	Total.
C. W. C. Dunnington	Capitol police, pay-roll for December, 1860	\$72 50	
A. K. Arnold	do	45 84	
Samuel J. Johnson	do	45 84	
J. T. Ball	do	45 84	
W. H. Thompson	do	45 84	
Thos. C. Wells	do	45 84	
Richard D. Slater	do	45 84	
Frederick Fritz	do	45 84	
Jno. P. Hamlin	do	45 84	
Francis Reily	do	45 84	
James S. Magee	do	45 84	
Michael French	do	45 84	
J. N. Crockwell	do	45 84	
Thos. Proby	do	45 84	
Jere'h Boyd	do	33 34	
Andrew R. Potts	Making a complete index to the Library of the House of Representatives, during the 36th Congress		\$701 76
C. D. Martin	Stationery, 1st session 36th Congress		1,000 00
J. S. Brown	Clerk to Committee on Public Lands, from 3d to 31st December, 1860		21 90
J. F. Brandtz	Clerk to Committee on Elections, from 3d to 31st December, 1860		116 00
James Parker	Clerk to Committee on Invalid Pensions, from 3d to 31st December, 1860		116 00
Byron G. Daniels	Clerk to Committee on Accounts, from 3d to 31st December, 1860		116 00
J. J. Coombs	Clerk to Committee on Military Affairs, from 3d to 31st December, 1860		116 00
Sam'l Lee	"Mail boy," pay-roll for December, 1860	75 00	116 00
A. G. Myers	do	75 00	
Wm. Hartough	Messenger for south wing for December, 1860		150 00
			125 00

Isaac Entwistle.....	Engineer, pay-roll for December, 1860	125 00
M. R. Shankland	do.....do.....	100 00
D. A. McElhone.....	do.....do.....	100 00
Jos. Mansfield	do.....do.....	62 00
Thos. Hunt	do.....do.....	62 00
Sylvester Adams	do.....do.....	62 00
Wm. Sanderson	do.....do.....	62 00
Wm. Mooney	do.....do.....	62 00
Geo. W. Chapman	Temporary clerk for December, 1860	150 00
J. R. Briggs, jr.....	do.....do.....	150 00
Wm. Averill	do.....do.....	150 00
Sidney Edgerton	Newspapers, 1st session 36th Congress.....	450 00
C. C. Washburn	do.....do.....	48 50
J. M. Quarles	Newspapers	48 50
R. Holland Duell.....	do.....do.....	48 25
Hy. Waldron.....	do.....do.....	47 62
James L. Pugh.....	do.....do.....	44 00
David Clopton	do.....do.....	43 00
F. H. Morse	do.....do.....	41 50
I. H. Richards	do.....do.....	39 00
	"Independent" for:	
	Hon. O. S. Ferry	2 00
	John Hutchins	1 00
	Henry L. Dawes	1 10
	J. M. Ashley	1 00
J. L. Elliott.....	New York "Observer" for:	5 10
	Hon. Z. B. Vance	5 00
	Wm. G. Whiteley	2 50
C. Robinson.....	Newspapers	7 50
Wm. Helmick.....	do.....do.....	50 00
W. Howard	do.....do.....	50 00
E. G. Spaulding.....	do.....do.....	50 00
R. E. Fenton	do.....do.....	50 00
Jno. W. H. Underwood	do.....do.....	50 00
E. B. French.....	do.....do.....	50 00
E. McPherson	do.....do.....	50 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Thos. D. Eliot	Newspapers.....	-----	\$50 00
L. J. Gartrell	do	-----	50 00
Jno. V. Wright	do	-----	50 00
W. T. Avery.....	do	-----	50 00
Jno. W. Killinger	do	-----	50 00
J. H. Reynolds.....	do	-----	50 00
James Jackson	do	-----	50 00
E. B. Pottle.....	do	-----	50 00
Alexander & Cooke.....	do	-----	50 00
James B. Smith & Co	do	-----	3,000 00
	Binding 25,000 volumes Agricultural Patent Report, 1859, at 12 cents.....	-----	
	Binding the following documents, 1st session 36th Congress, in sheep, viz:	\$705 00	
	470 copies Executive Documents, vols. 1, 8, and 12, Interior Department, 1,410 vols.		
	255 copies Executive Documents, vols. 8 and 12, members of House of Representatives, 510 volumes.....	255 00	
	67 copies Executive Documents, vols. 1, 8, and 12, executive departments, 201 vols..	100 50	
	23 copies Executive Documents, vols. 1, 8, and 12, foreign legations, 69 volumes....	34 50	
	78 copies Executive Documents, vols. 1, 8, and 12, for senators, 234 volumes.....	117 00	
	40 copies Executive Documents, vols. 1, 6, 13, and 15, State Department, 160 volumes.	80 00	
	40 copies Reports of Committees, vol. 4, State Department	20 00	
	10 copies Miscellaneous Documents, vol. 1, State Department.....	5 00	
	470 copies Executive Documents, vol. 13, Interior Department	235 00	
	78 copies Executive Documents, vol. 13, senators.....	39 00	
	255 copies Executive Documents, vol. 13, members of House of Representatives.....	127 50	
	90 copies Executive Documents, vol. 13, executive departments and foreign legations.	45 00	
	Page, pay-roll for December, 1860	58 00	
J. N. Moulder	do.....	58 00	
E. S. Schreiner.....	do.....	58 00	
M. E. Hall.....	do.....	58 00	
W. C. Harte	do.....	58 00	
J. E. Pillsbury.....	do.....	58 00	
J. L. Coombs.....	do.....	58 00	
William Todd.....	do.....	58 00	
William Phipps	do.....	58 00	
			1,763 50

W. A. Gantly.....	do.....	do.....	58 00
George Capem.....	do.....	do.....	58 00
A. J. Parish.....	do.....	do.....	58 00
A. W. Moise.....	do.....	do.....	58 00
William H. Dunn.....	do.....	do.....	58 00
George Boyde.....	do.....	do.....	58 00
D. W. Davis.....	do.....	do.....	58 00
John W. Albut.....	do.....	do.....	58 00
J. F. Jewell.....	do.....	do.....	58 00
J. C. Tompkins.....	do.....	do.....	58 00
Richard G. Olcott.....	do.....	do.....	58 00
W. A. Linton.....	do.....	do.....	58 00
William Fudge.....	Temporary mail-boy, pay-roll for December, 1860.....		50 00
Henry Schreiner.....	do.....	do.....	50 00
Jesse D. Wright.....	Services as page to Sergeant-at-arms, December, 1860.....		-----
A. R. Parker.....	Land map clerk, pay-roll for December, 1860.....		180 00
George Chipman.....	do.....	do.....	150 00
Rufus Bentice.....	do.....	do.....	150 00
James Peacock.....	do.....	do.....	150 00
Joseph P. Alleyn.....	do.....	do.....	150 00
M. Smith.....	Clerk to the Committee on Commerce, December 4 to 31, 1860.....		780 00
A. W. Fletcher.....	Clerk to the Committee on Revolutionary Pensions, December 3 to 31, 1860.....		112 00
B. T. Hutchins.....	Clerk to the Committee on Indian Affairs, December 3 to 31, 1860.....		116 00
Ben Perly Poore.....	Clerk to the Committee on Foreign Affairs, December 3 to 31, 1860.....		116 00
J. E. Mendenhall.....	Clerk to the Committee on the Post Office and Post Roads, December 3 to 31, 1860.....		116 00
S. T. Sawyer.....	Clerk to the Committee of Thirty-three, December 12 to 31, 1860.....		116 00
Edward Darling.....	Laborer, pay-roll for December, 1860.....		80 00
Julius De Saule.....	do.....	do.....	43 50
Thomas Martin.....	do.....	do.....	43 50
Frank Tavenes.....	do.....	do.....	43 50
Lewis Sanders.....	do.....	do.....	43 50
David Fisher.....	do.....	do.....	43 50
John Johnson.....	do.....	do.....	46 50
John Massey.....	do.....	do.....	46 50
Ed. M. Thomas.....	do.....	do.....	46 50
John Costine.....	do.....	do.....	62 00

			1,160 00

			100 00
			62 00

			780 00
			112 00
			116 00
			116 00
			116 00
			116 00
			80 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
Levi Neal	Laborer, pay-roll for December, 1860.....	\$46 50	\$631 00
William C. Smith.....	do.....do.....	46 50	
William Twine.....	do.....do.....	46 50	
Rinaldo Griffin.....	do.....do.....	26 00	
W. J. Ketcham.....	Winding clocks in hall and offices of House of Representatives, June 1 to November 30, 1860	120 00	
	Repairing clocks in engine room.....	2 50	
	Repairing clocks in boiler room	2 50	
	Repairing gas metre	3 00	
	Repairing clock in Naval Affairs Committee room.....	2 00	
	Repairing clock in Ways and Means Committee room.....	1 50	
	Repairing clock in Public Lands Committee room	1 00	
	Repairing clock in room No. 55.....	2 50	
W. J. Ketcham.....	Winding clocks in hall, &c., December, 1860	135 00	
G. N. Beal.....	Services in stationery room, &c., December, 1860	20 00	
L. D. Johnson	Messenger, pay-roll, miscellaneous, December, 1860.....	100 00	
Nathaniel M. McDowell.....	do.....do.....	93 00	
A. R. Potts	do.....do.....	93 00	
W. F. Norris	do.....do.....	62 00	
	do.....do.....	62 00	
O. S. Ferry.....	Newspapers, 1st and 2d sessions 36th Congress	310 00	
J. C. Burch.....	Newspapers.....	74 50	
J. L. N. Stratton.....	do.....do.....	50 00	
H. E. Royce	do.....do.....	50 00	
William Vandever.....	do.....do.....	50 00	
John W. Noell.....	do.....do.....	50 00	
William Irvine.....	do.....do.....	50 00	
C. B. Sedgwick.....	do.....do.....	50 00	
John Wood.....	do.....do.....	50 00	
J. Morrison Harris.....	do.....do.....	50 00	
	do.....do.....	50 00	
	do.....do.....	50 00	

J. S. Millson.....	do	50 00
J. A. Gilmer.....	do	50 00
E. Joy Morris.....	do	50 00
C. L. Beale.....	do	47 50
John Hickman.....	do	44 00
C. H. Larrabee.....	do	44 00
E. P. Walton.....	do	43 75
Charles Delano.....	do	42 00
J. A. Gurley.....	do	42 00
Carey A. Trimble.....	do	41 00
Cyrus Aldrich.....	do	50 00
Thomas C. Theaker.....	do	50 00
James H. Campbell.....	do	50 00
Charles R. Train.....	do	50 00
Augustus Frank.....	do	50 00
J. F. Farnsworth.....	do	50 00
J. A. Bingham.....	do	48 50
Leonard & Lamb.....	do	21 00
George W. Alexander.....	do	
	Southern Argus for Hon. John S. Millson.....	
	Binding Congressional Globe, 1st session 36th Congress:	
	899 copies, part 1, at 60 cents	539 40
	601 copies, part 2, at 60 cents	360 60
	386 copies, part 3, at 60 cents	231 60
	3,114 copies, part 4, at 60 cents	1,868 40
		3,000 00
J. B. Smith & Co.....	Binding the following documents, 1st session 36th Congress, in sheep, viz:	
	470 copies House Reports, vol. 4, for the Interior Department.....	235 00
	470 copies Executive Documents, vol. 6, for the Interior Department.....	235 00
	255 copies Executive Documents, vols. 6 and 13, for members House Representatives.	255 00
	78 copies Executive Documents, vol. 6, for senators	39 00
	78 copies Executive Documents, vol. 4, for senators	39 00
	67 copies Executive Documents, vol. 6, for executive departments	33 50
	23 copies Executive Documents, vol 6, for foreign legations	11 50
	In half roane—	
	232 copies Estimates of Appropriations, at 45 cents, for members	104 40
	In half morocco and extra names—	
	20 copies Estimates of Appropriations, at 75 cents, for members	15 00
J. B. Smith & Co.....	Binding the following documents, first session 36th Congress, in sheep, viz:	
	470 copies Executive Documents, vol. 13, at 50 cents, for Department of the Interior.	235 00
		967 40

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

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CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
J. B. Smith & Co.—Continued.....	255 copies Executive Documents, vol. 1, at 50 cents, for members of the House of Representatives.....	\$127 50	
	67 copies Executive Documents, vol. 13, at 50 cents, for executive departments.....	33 50	
	23 copies Executive Documents, vol. 13, at 50 cents, for foreign legations.....	11 50	
	78 copies Executive Documents, vol. 13, at 50 cents, for senators.....	39 00	
	4 copies Executive Documents, vols. 1, 6, 13, and 15, for United States Mint.....	8 00	
	2 copies Executive Documents, vols. 1, 6, 13, and 15, for Committee of Claims.....	4 00	
	2 copies Executive Documents, vols. 1, 6, 13, and 15, for Library of Congress.....	4 00	
	2 copies Executive Documents, vols. 1, 6, 13, and 15, for Naval and Military Academies.....	4 00	
	Same in calf—		
	30 copies Executive Documents, vols. 1, 6, 13, and 15, at 61 cents, for House Library.....	73 20	
	28 copies Executive Documents, vols. 1, 6, 13, and 15, at 61 cents, for Senate.....	68 32	
	10 copies Executive Documents, vols. 1, 6, 13, and 15, at 61 cents, for office of House of Representatives.....	24 40	
	1 port folio, in full Russia, at \$5, for speaker's desk.....	5 00	
	Newspapers.....		\$637 42
Wm. Kellog.....	do.....		50 00
M. L. Bonham.....	do.....		50 00
M. J. Crawford.....	do.....		50 00
John McQueen.....	do.....		43 00
B. F. DeBow.....	DeBow's Review, to Hon. John S. Phelps.....		5 00
J. S. McCalla.....	"Episcopal Record," for Hon. J. S. Millson.....		5 00
McClernand & Dill.....	"Appeal," to Hon. J. A. McClernand.....		2 50
Wm. Butterfield.....	Newspaper, "New Hampshire Patriot," for M. W. Tappan.....		75
Hugh Young.....	Clerk to Committee on Territories, 3d to 31st December, 1860.....		116 00
Charles H. Upton.....	Clerk to Committee on Naval Affairs, December, 1860, twenty-nine days.....		116 00
Josiah H. Hobbs.....	Clerk to Judiciary Committee, 3d to 31st December, 1860.....		116 00
W. H. H. Barclay.....	75 cords hickory wood, at \$7 75.....	581 25	
	Sawing, wheeling, and packing in vaults, at \$ 2 25 per cord.....	168 75	
	75 cords pine wood, at \$5 per cord.....	375 00	
	Wheeling and packing in vaults, at 75 cents per cord.....	56 25	
			1,181 25

Daniel Buck	Collating, preparing, and correcting for publication the list of appropriations made, new offices created, &c., at 1st session 36th Congress, as required by the act of July 4, 1836, and authorized by resolution of House of Representatives, 3d March, 1857, and the act 4th May, 1858.....	360 00
J. J. McElhone.....	Services rendered the Judiciary Committee as stenographer, under resolution 7th May, 1860, seventy-five columns, at \$4½ per column.....	337 50
James C Walker.....	Compensation as reading clerk in the office House of Representatives from March 1 to November 30, 1860, at \$30 per month, resolution 30th March, 1857, and act 4th May, 1858	270 00
J. H. Hobbs.....	Services as clerk to Judiciary Committee in arranging testimony in the Watrous case, six days	24 00
W. D. Wyvill.....	2 ink cans, 75 cents; 2 tin trays, 50 cents.....	1 25
	Repairing 2 lamps	50
	Repairing 2 lamps and 5 lights.....	3 50
	Repairing 2 lamps and 2 lights.....	75
Reuben Davis.....	Stationery, 2d session, 36th Congress.....	6 00
George Marston	Use of horse and wagon for November and December, 1860, sixty one days, at \$2 per day.....	21 26
	Use of 2 saddle horses for December, thirty-one days, at \$1 50 each	122 00
		93 00
George Marston.....	Use of 2 saddle horses one month after and one month prior to the session of Congress, as is customary, it being from June 26 to July 26, and from November 3 to December 3, 1860, sixty days, at \$1 50 each.....	215 00
M. Ludley Lee	Newspapers.....	180 00
W. H. Hooper	do.....	50 00
W. D. Brayton.....	do.....	50 00
Alfred Wells	do.....	50 00
Francis M. Bristow	do.....	50 00
J. T. Harris.....	do.....	50 00
S. Moore	do.....	50 00
A. Burlingame	do.....	53 75
Wm. Windon	do.....	50 00
Elbert S. Martin.....	do.....	50 00
Peter E. Love.....	do.....	50 00
E. R. Reynolds	do.....	50 00
Andrew J. Hamilton.....	do.....	50 00
O. R. Singleton	do.....	50 00
John B. Haskin	do.....	50 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Thomas L. Anderson.....	Newspapers.....	-----	\$50 00
J. T. Nixon.....	do.....	-----	50 00
Chapin Hall.....	do.....	-----	50 00
D. Loomis.....	do.....	-----	50 00
J. C. Robinson.....	do.....	-----	50 00
Thomas C. Hindman.....	do.....	-----	50 00
J. G. Davis.....	do.....	-----	50 00
Wm. H. English.....	do.....	-----	50 00
S. F. Leake.....	do.....	-----	50 00
John J. Jones.....	do.....	-----	50 00
W. S. Holman.....	do.....	-----	50 00
James T. Hale.....	do.....	-----	50 00
Thomas Corwin.....	do.....	-----	50 00
W. B. Stokes.....	do.....	-----	50 00
Joshua Hill.....	do.....	-----	50 00
Thomas Hardeman, jr.....	do.....	-----	50 00
Reuben Davis.....	do.....	-----	50 00
Thomas G. Davidson.....	do.....	-----	48 00
A. R. Boteler.....	do.....	-----	47 60
George W. Hughes.....	do.....	-----	47 00
Thomas M. Edwards.....	do.....	-----	46 40
Eli Thayer.....	do.....	-----	44 50
C. B. Tompkins.....	do.....	-----	44 00
J. J. McRea.....	do.....	-----	41 50
Thomas A. R. Nelson.....	do.....	-----	41 00
G. H. Pendleton.....	do.....	-----	37 00
J. L. M. Curry.....	do.....	-----	8 25
R. B. Rhett, jr.....	For "Mercury" to Hon. C. B. Howard.....	-----	2 50
Morris & Willis.....	For "Home Journal" for Hon Z B Vance.....	-----	2 00
J. M. Barclay.....	2,000 copies of the Constitution of the United States, Jefferson's Manual, rules and joint rules of the two houses, and Barclay's Manual, furnished for the use of the House under the resolution of the House of March 16, 1860, at \$2 50 per copy.....	-----	1,000 00

J. D. Ward	Superintending the old hall of representatives, attending to the furnaces under the folding room and old hall, from June 24, 1860, to December 6, 1860, 166 days, at \$3 per day	498 00
L. J. Middleton	5 bushels of ice, daily, November 1 to December 14, 38 days, 190 bushels, at 50 cents. 7 bushels of ice, daily, from December 15 to December 31, 14 days, 98 bushels, at 50 cents, exclusive of Sundays	\$95 00 49 00
George W. Scranton	Newspapers	144 00
Robert Hatton	do	50 00
James M. Leach	do	50 00
A. G. Jenkins	do	50 00
William N. H. Smith	do	50 00
James Buffinton	do	40 80
William M. Browne	do	18 00
George W. Bowman	4 copies daily Constitution, from July 1, 1860, to January 1, 1861. 5 copies daily Constitution, from July 1, 1860, to January 1, 1861. 4 copies daily Constitution, from April 11, 1859, to July 1, 1860, office House of Representatives. 5 copies daily Constitution, from April 11, 1859, to July 1, 1860, House Library	12 00 15 00 29 32 36 65
George W. Bowman	The Constitution for members, 1st session 36th Congress. Hon. J. D. Ashmore, \$6; ditto, semi-weekly, \$3	9 00
	W. Allen, \$3; J. H. Ashley, \$2	5 00
	M. L. Bonham, \$3 25; ditto, semi-weekly, \$4	7 25
	A. Burlingame, \$3 25; C. Case, \$2	5 25
	J. L. M. Curry, \$6; D. Clopton, \$6	12 00
	W. R. W. Cobb, \$3; D. C. DeJarnett, \$3	6 00
	S. Edgerton, \$3; E. Estabrook, \$2 67	5 67
	T. M. Edwards, \$3; O. S. Ferry, \$6	9 00
	J. F. Farnsworth, \$3; J. Humphrey, \$3 25	6 25
	W. H. Hooper, \$3 25; T. C. Hindman, \$3	6 25
	T. C. Hindman, weekly	1 00
	A. J. Hamilton, \$3; James Jackson, \$3 25	6 25
	P. E. Love, \$3; ditto, weekly, \$2	5 00
	R. McKnight, \$3; C. D. Martin, \$3	6 00
	G. Marston, \$3; J. S. Morrell, \$3 25	6 25
	J. J. McRea, \$3 25; S. Moore, \$6	9 25
	J. A. McClernand, \$3; J. S. Millson, \$6	9 00
	W. E. Niblack, \$6; ditto, weekly, \$2	8 00

CONTINGENT EXPENSES OF

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
George W. Bowman—Continued.....	Hon. T. A. R. Nelson, \$3 25; M. A. Otero, \$6.....	\$9 25	
	J. S. Phelps, \$3; J. L. Pugh, \$6.....	9 00	
	G. H. Pendleton, \$6; A. Rust, \$3.....	9 00	
	A. Rust, weekly, 3 copies, \$6; C. Scott, \$3 50.....	9 50	
	L. Stout, \$6; D. E. Simes, \$3 38.....	9 38	
	E. G. Spaulding, \$3 25; D. E. Sickles, \$3 25.....	6 50	
	C. L. Vallandigham, \$4; W. G. Whitely, \$3 25.....	7 25	
	Warren Winslow, \$3 40; ditto, weekly, \$2.....	5 40	\$187 70
John Woodruff.....	Newspapers.....	-----	50 00
M. L. Bonham.....	do.....	-----	50 00
C. L. Vallandigham.....	do.....	-----	37 75
W. Barksdale.....	do.....	-----	25 00
D. A. Carter.....	Additional pay as tally clerk from March 1, 1859, to February 15, 1860, as allowed by the resolution of March 3, 1857, and act of May 4, 1858.....	-----	346 49
M. Butterfield.....	Newspaper account.....	-----	50 00
M. O. Hood.....	Gold pen, stationery account.....	-----	10 00
B. F. Junkin.....	Newspaper account, 2d session 36th Congress.....	50 00	
	Newspaper account, 1st session 36th Congress.....	1 50	
W. R. W. Cobb.....	Newspapers.....	-----	51 50
D. W. Gooch.....	do.....	-----	51 50
John Sherman.....	do.....	-----	50 00
H. Winter Davis.....	do.....	-----	50 00
Geo. W. Palmer.....	do.....	-----	50 00
John Y. Brown.....	do.....	-----	50 00
H. G. Blake.....	do.....	-----	43 25
Schuyler Colfax.....	do.....	-----	36 62
Willmer & Rogers.....	“Loudoun Evening Mail” for Hon. M. R. H. Garnett.....	-----	32 09
W. Barksdale.....	Newspapers.....	-----	25 00
Willy Barker.....	Freight on three barrels ink from Cincinnati.....	-----	25 00
Alexander & Cooke.....	Binding 25,000 copies Patent Office Reports, (Agricultural,) 1859, at 12 cents per vol.....	-----	6 93
			3,000 00

Jas. B. Smith & Co

Binding the following documents, in sheep, 1st session 36th Congress, viz:	
470 copies Ex. Docs., vols. 3, 5, and 9, at 50 cts., for Interior Department, 1,410 vols.	705 00
255 copies Ex. Docs., vols. 3 and 5, at 50 cents, for members of House, 510 vols.	255 00
67 copies Ex. Docs., vols. 3 and 5, at 50 cents, for executive departments, 134 vols.	67 00
23 copies Ex. Docs., vols. 3 and 5, at 50 cents, for foreign legations, 46 vols.	23 00
78 copies Ex. Docs., vols. 3 and 5, at 50 cents, for senators, 156 vols.	78 00
40 copies Ex. Docs., vols. 3, 5, 8, and 12, at 50 cts., for State Department, 160 vols.	80 00
4 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 50 cts., for library of United States mint, 24 vols.	12 00
2 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 50 cents, for library of Congress, 12 vols.	6 00
2 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 50 cts., for Court of Claims, 12 vols.	6 00
2 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 50 cents, for Naval and Military Academies, 12 vols.	6 00
Same, in calf—	
30 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 61 cents, for House library, 180 vols.	109 80
10 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 61 cents, for office of House of Representatives, 60 vols.	36 60
28 copies Ex. Docs., vols. 3, 4, 5, 8, 9, and 12, at 61 cents, for Senate, 168 vols.	102 48
The following originals of the House of Representatives, 1st session 36th Congress, in half sheep, viz:	
10 parts miscellaneous, 4 parts Interior Department, 1 part State Department, 3 parts Post Office Department, at \$5, (18 volumes)	90 00
7 parts Treasury Department, 2 parts Message, 5 parts Court of Claims, 2 parts War Department, at \$5, (16 volumes)	80 00
2 parts Navy Department, at \$5	10 00
1 blank book, half mo., at \$1	1 00
For the House of Representatives, 16 names of members lettered on Congressional Manual	4 00

1,671 88

C. Wendell

Binding documents, viz:	
4 volumes for Committee of Elections	3 00
Ruling and binding 6 quires Royal Legers	21 00
Ruling and binding 6 quires Medium Journal, No. 4	15 00
Printing, ruling, and binding, 5 quires Medium Speech Register	12 50
Ruling and binding 8 quires Cap Book	6 00
Binding 3 volumes, 8vo	2 25
Cutting index in book, document room	2 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
C. Wendell—Continued.....	Ruling and binding index to House Journal, and tags.....	\$7 50	
	Ruling and binding 7 quarto alphabet indexes.....	7 50	
	Cutting 2,000 labels, each, of 242 members, 484,000 in all.....	103 42	
	Binding contested election, 1 volume.....	75	
	Cutting 2,000 labels, each, of three members' names.....	1 28	
	Ruling 920 vouchers, at 25 cents per hundred.....	2 30	
	Ruling 920.....do.....	2 30	
	Ruling 400.....do.....	1 00	
	Pasting 50 cards on boards.....	5 00	
Samuel Coomes.....	Sweeping office of map clerks from June 1 to November 30, 1860.....		\$193 30
Franck Taylor.....	10 copies American Almanac, for office of House of Representatives, 1860.....		24 00
	1 copy British Almanac, 1860.....		
Franck Taylor.....	Volume 19 of Encyclopedia Britannica.....	12 50	
	Volume 20.....do.....	1 50	
James Craig.....	Newspapers.....		14 00
F. E. Spinner.....	do.....	5 50	
Geo. S. Houston.....	do.....	5 50	
Geo. S. Hawkins.....	do.....		11 00
Robert McKnight.....	do.....		50 00
James H. Thomas.....	do.....		50 00
W. G. Whitely.....	do.....		50 00
W. C. Anderson.....	do.....		50 00
John C. Rives.....	Stationery.....		37 00
Irea Saunders.....	Publishing the "Daily Globe" list of appropriations of 1st session 36th Congress, 763 squares, at \$1.....		36 00
Amanda Griffin.....	Serving in the ladies' retiring-room, House of Representatives, December 1 to 7, 1861, 38 days, at \$1.....		14 50
	Washing 71 $\frac{1}{8}$ dozen towels for House of Representatives and offices, for December, 1860, at 50 cents per dozen.....		18 56
John Miner.....	Services in cleaning House post office, 3 days, at \$1 50 per day.....		763 00
			38 00
			35 58
			4 50

John R. Campbell	150 00
Herman Kriesman	
Job W. Angus	400 00
Services in the office of House of Representatives for one month ending June 15, 1860.	
Services in the office of the House of Representatives on land maps, per resolution of May 4, 1848, during the months of November and December, 1860, and a part of January, 1861.	
27 packing boxes, 22 at \$2 50 and 5 at \$3.	70 00
28 packing boxes, at \$2 50.	70 00
Repairing curtains and seats in House	5 00
Repairing one blind	1 00
Laying oil-cloth.	1 00
2 pieces gimp and putting on same.	10 00
Covering 2 doors with green cloth	5 00
16 papers silver tacks.	4 00
1 piece oil-cloth in hall	1 00
Covering cornice, chandeliers, glass, &c., in Speaker's room.	8 00
Same in folding room	5 00
Same in post office	5 00
50 yards matting	31 25
Taking up and cleaning carpet in gallery and packing away	30 00
Ditto in 33 committee rooms	82 50
Taking down 80 sets curtains and packing same in tobacco	80 00
Tobacco used for same	5 00
Repairing bolts in room of Committee on the Post Office and Post Roads.	1 00
1 set of casters for.....do.	1 00
Repairing lock and door of.....do.	1 00
Repairing key to.....do.	25
1 door-knob for room of Committee on Public Expenditures	1 00
Repairing lock to room of Committee on Agriculture.	1 00
2 keys for.....do.	50
Repairing lock to Covode committee room	1 00
1 key for.....do.	25
Repairing lock to room of Committee on the Post Office and Post Roads	1 00
1 key for.....do.	25
Repairing lock to room of Committee of Elections	1 00
1 key for.....do.	25
Knob on door of water-closet	50
1 lock for.....do.	50
Repairing 8 bolts on hall doors.	2 00
1 bolt to folding room door.	50
Attaching lock to room of Committee on Public Buildings and Grounds.	1 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus —Continued.....	1 key for lock of room of Committee on Public Buildings and Grounds.....	\$0 25	
	1 set of curtains for room of Committee of Claims	1 00	
	Repairing lock of telegraph room.....	1 00	
	Key for.....do.....	1 00	
	Repairing door to closet in gallery.....	1 00	
	Key for	1 00	
	2 sets casters for room of Committee on the Territories	2 00	
	Repairing bolts to	1 00	
	Repairing bolts to door of room of Committee of Elections	1 00	
	Repairing 4 drawers in chief clerk's room.....	1 00	
	Repairing lock in folding room and 2 keys	2 00	
	Shelving in stationery room	25 00	
	600 feet of lumber for stationery room.....	30 00	
	Making trussels for plumbers	10 00	
	9 whetstones for folding room	2 50	
	2 sets casters for room of Pacific railroad committee.....	2 00	
	Repairing 3 chairs	2 50	
	Repairing door of guard room.....	1 50	
	Repairing door key of Enrolling room.....	1 00	
	Taking out 3 door heads in basement for plumbers to hang pipe	2 00	
	1 door key for retiring room.....	1 00	
	Taking down 2 large glasses and 6 cornices, and removing furniture in room of Committee of Elections	10 00	
	48 window fastenings, at 12 cents.....	6 00	
	1 gross screws.....	50	
	Putting on window fastenings	5 00	
	2 casters in room of Committee on Revolutionary Claims	50	
	Repairing door in room of Committee on Agriculture.....	50	
	1 set casters for folding room	1 00	
	1 pair brass hinges for bookcase.....	75	
	2 lights of glass for folding room.....	2 00	
	Putting in same	1 00	

Moulding in 3 doors in gallery.....	1 50
Repairing window and putting pocket in furnace in guard room.....	2 00
Shelf in iron safe in Clerk's office.....	1 00
Hanging sash.....	2 00
Taking down 1 mirror and 3 cornices and removing furniture from room of Committee on Revolutionary Claims.....	5 50
Ditto in room of Committee on Accounts.....	5 25
1 large box for books.....	3 00
Strapping box.....	50
Repairing sash lock.....	25
Taking up and shaking gallery carpet.....	25 00
200 feet twine cord.....	16 00
3 mahogany bottoms for ice pitchers.....	5 00
Covering 4 pine doors.....	20 00
Taking down and storing away 19 cornices.....	10 00
65 papers silver tacks.....	16 25
Covering 1 pine door.....	6 00
Putting up 10 cornices.....	5 00
Cleaning and packing away gallery cushions.....	10 00
Taking down glasses, &c., and moving furniture.....	8 00
Taking down 3 sets curtains and packing in tobacco and cleaning room.....	10 00
Repairing chairs in telegraph room.....	1 00
1 set castors for telegraph room.....	1 00
Repairing bolt and door for room of Committee of Ways and Means.....	1 00
Hanging sash in.....do.....do.....	1 00
Repairing lock for basement.....	1 00
Removing mirror from mileage room.....	1 00
Taking down 3 cornices in Clerk's room.....	75
Taking down 4 cornices in room of Committee of Ways and Means.....	1 00
Making platform for folding room.....	1 00
Encasing closets in folding room.....	1 50
Lock and hinges for folding room.....	1 25
Repairing wagon shed.....	12 00
5 pounds wrought nails.....	90
8 pounds cut nails.....	48
1 padlock, \$1; hasps for same, \$1 50.....	2 50
2 large hinges, \$5; 600 feet lumber, \$15.....	20 00
Taking down 2 cornices in Pacific Railroad Committee room.....	50
Repairing door of chief clerk's room.....	1 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued.....	Taking down 2 cornices in retiring room.....	\$0 50	
	1 knob on door in folding room	75	
	1 light and glazing	1 50	
	Repairing partition in Buck's room.....	50	
	Hanging mirror in room of Committee on Accounts.....	3 00	
	Putting bolts on door of.....do.....	1 00	
	1 door key.....	1 00	
	Hanging sash in room of Committee on Indian Affairs.....	2 00	
	Cord and pulleys for.....do.....	3 00	
	1 door key for Sergeant at-Arms's room.....	1 00	
	Laying floor for books.....	1 00	
	Removing case from room of Committee on the Judiciary.....	8 00	
	Removing case in small room	2 00	
	Removing 3 cornices in room	75	
	1 large mirror, \$3; 6 pounds cut nails, 36 cents.....	3 36	
	Removing furniture.....	3 00	
	Hanging mirror in room of Committee on Revolutionary Claims.....	3 00	
	Repairing washstand in room of Committee on Pacific Railroad	2 00	
	Repairing washstand in Covode committee room.....	1 00	
	3 large glasses for book case	4 50	
			\$787 74
Do.....	4 large bolts for committee rooms.....	8 00	
	Taking down 4 cornices in Sergeant-at-Arms's room	1 00	
	4 cornices put up in room of Committee of Ways and Means	2 00	
	3 cornices put up in Clerk's office.....	1 50	
	Making floor mat.....	1 00	
	1 door key for guard room.....	1 00	
	Moulding on hall door.....	50	
	1 5-foot bolt for Military Affairs Committee room	5 00	
	1 lock for folding room	1 00	
	3 locks for messenger and clerks' closet.....	2 00	
	Knobs on door to lobby.....	1 00	

Making drawer for folding room	2	50
Lock for ditto.....	1	00
Repairing drawer for folding room		50
Repairing table for folding room.....		50
2 bolts in Military Affairs Committee room	2	50
Taking down four cornices.....	2	00
Removing two book cases	5	00
Repairing door lock in folding room.....		50
Repairing sash in Covode committee room		50
Taking down doors in folding room	1	00
Altering table—four new legs	6	00
Repairing drawers for ditto, \$2; 2 drawer locks, \$2.....	4	00
2 drawer keys for ditto	1	00
54 dozen brushes for folding room	19	80
1 gallon turpentine.....	1	25
Removing shelving, No. 40	2	00
Putting up same in basement.....	4	00
Putting up new shelves in basement	5	00
14 papers carpet tacks	1	40
Putting up two cornices in Sergeant-at-Arms' room	1	00
Putting up two cornices in retiring room	1	00
Putting up two cornices in Pacific Railroad room.....	1	00
1,353 feet lumber, at 4 cents	54	12
20 pounds nails.....	1	20
1 large box	5	00
Cleaning and packing away 6 carpets.....	18	00
2 sets curtains	2	00
Repairing blinds in folding room.....	1	00
1 hatchet for document room.....	1	25
2 small tack hammers	1	00
1 mallet, 50 cents; 4 punches, \$1 50.....	2	00
Boxing up steam pipes	8	00
Putting up four cornices.....	2	00
Putting up two cornices in Covode committee room.....	1	00
Repairing lock in basement.....		50
Making feed box, \$3; 60 feet flooring, \$2 40.....	5	40
Padlock, hasp and hinges	2	00
Fitting up book room.....	20	00
15 pounds nails, \$1 25; 3 mouse traps, \$1.....	2	25

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued.....	2 gross screws.....	\$1 00	
	Repairing doors in book room.....	75	
	Repairing bolts.....	1 00	
	Altering two locks.....	2 00	
	200 feet black walnut, at \$12.....	24 00	
	Freight and cartage.....	3 00	
	9 pair brass hinges.....	2 70	
	1 glass for library.....	50	
	Putting on same.....	25	
	Sandpaper, 25 cents; 2 gross screws, \$1 75.....	2 00	
	Putting in door heads in basement.....	5 00	
	Repairing doors for coal bin.....	2 00	
	2 pair large hinges.....	1 50	
	Putting on same.....	1 00	
	Fitting keys to case for map clerks.....	50	
	4 yards enameled cloth.....	3 00	
	300 feet lumber for coal bins.....	9 00	
	Putting up same, \$2; 35 pounds nails, \$2 10.....	4 10	
	7 gross buttons for water closets.....	70	
	Repairing buttons for water closets.....	54 00	
	Repairing book case in Covode committee room.....	5 00	
	Repairing sofa in Covode committee room.....	50	
	1 set castors.....	1 00	
	2 mops for laborers.....	1 50	
	1 set castors for chairs in Committee on Elections room.....	1 00	
	2 sets castors on sofa in Committee on Elections room.....	50	
	3 cornices in Revolutionary Claims Committee room.....	75	
	Repairing lock in basement.....	50	
	8 papers tacks.....	80	
	Hanging mirror in Election Committee room.....	3 00	
	Hanging mirror in Covode committee room.....	3 00	
	Hanging mirror in Judiciary Committee room.....	3 00	

1 set castors in Invalid Pensions Committee room	1 00
6 sets castors in Revolutionary Pensions Committee room	1 50
Repairing chairs in ditto	1 00
Repairing table in ditto	50
1 lock on drawer	50
Repairing washstand in Military Affairs Committee room	7 00
Repairing chairs in District of Columbia Committee room	3 00
1 set castors in Roads and Canals Committee room	1 00
1 set castors in mileage room	1 00
Making key for Clerk's room	50
2 castors to chairs in telegraph room	50
Repairing washstand in telegraph room	50
1 set castors in Foreign Affairs Committee room	1 00
1 set castors in Committee on Commerce room	1 00
1 set castors on sofa in Committee on Commerce room	1 00
Repairing table in Public Lands Committee room	50
Putting up case in Judiciary Committee room	6 00
Putting up two small cases	1 00
Putting up three cornices	75
Putting up furniture and books	3 00
Altering lock in folding room	1 00
Key for same	75
2 cornices put up in Committee on Accounts room	50
Covering furniture in engine room	2 00
2 dozen papers carpet tacks	2 40
Repairing cornice in Foreign Affairs Committee room	1 00
Hanging glass in mileage room	1 50
Dressing 75 tags for folding room	50
Repairing water stand in cloak room	7 00
Cleaning two carpets, putting down matting, and repairing and putting down carpets in map room	8 00
Repairing three flags for house	9 00
Putting down two carpets on first floor	8 00
4 yards enameled cloth	3 00
100 pounds white lead, \$12; 5 pounds litharge, \$1	13 00
15 pounds chrome yellow, \$8; 15 pounds chrome green	14 00
10 pounds red lead, \$2; 5 gallons boiled oil, \$6	8 00
5 gallons raw oil, \$6; 2 gallons spirits of turpentine \$2 50	8 50
1 dozen paint brushes	6 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued.....	1 dozen whitewash brushes..... 1 dozen small whitewash brushes..... 1 gallon Japan varnish..... 20 pounds chrome yellow.....	\$9 00 6 00 2 00 10 67	\$506 79 52 50 50 00 50 00 50 00 50 00 50 00 50 00 45 75 44 25
J. U. Pettit.....	Newspaper.....	-----	-----
M. J. Parrott.....	do.....	-----	-----
C. B. Cochrane.....	do.....	-----	-----
F. W. Kellogg.....	do.....	-----	-----
Alfred Ely.....	do.....	-----	-----
John Carey.....	do.....	-----	-----
R. Conkling.....	do.....	-----	-----
C. B. Hoard.....	do.....	-----	-----
William M. Dunn.....	do.....	-----	-----
Beals, Green & Co.....	do.....	-----	-----
	Boston Post, 1st session 36th Congress:		
	Hon. T. A. R. Nelson.....	4 34	
	Daniel E. Sickles.....	4 34	
	E. Estabrook.....	3 60	
	John Carey.....	4 00	
	P. B. Fouke.....	4 00	
	Thomas C. Hindman.....	8 00	
		-----	28 28
M. McMichael.....	North American Gazette:		
	Hon. R. H. Duell.....	4 00	
	E. P. Walton.....	2 91	
	R. McKnight.....	4 00	
	Thad. Stevens.....	4 00	
	B. F. Junkin.....	4 00	
		-----	18 91
Bull & Tuttle.....	Baltimore Clipper, for Hon. Z. B. Vance.....	-----	4 00
W. W. Boyce.....	Newspaper.....	-----	50 00
J. H. Reagan.....	do.....	-----	50 00

H. C. Longnecker.....	do	50 00
James A. Stallworth	do	50 00
A. B. Olin	do	50 00
S. G. Daily	Newspaper account.....	50 00
Emerson Etheridge	Newspaper.....	45 25
Bondurand, Elliott & Shields	Richmond Whig, 1st and 2d sessions, to—	
	Hon. J. H. Harris, weekly	3 00
	J. H. Harris, daily	8 00
	John Letcher, semi-weekly	8 00
	John Letcher, semi-weekly	1 25
	John Letcher, daily	3 75
	H. Maynard, daily	4 34
	H. Maynard, daily	2 50
	R. A. Pryor.....	2 50
James Wilson.....	Newspaper.....	33 34
Z. B. Vance.....	do	25 00
Wm. M. Broane.....	Constitution, for William Smith	21 50
L. A. Godey	Newspaper account.....	12 00
G. S. Houston.....	Newspaper.....	3 50
W. T. Dove.....	Plumber 1 day, and assistant, \$4; 3 brass treadles, \$36.....	3 00
	3 pairs brass hinges and screws, \$2 40; 1 filling, 25 cents.....	40 00
	12 globe holders, \$3; 1 drop light, \$3	2 65
	2 days, gas fitter and assistant.....	6 00
	1 tin union, \$1; 1 tin nipping, 40 cents	8 00
	6 days, gas fitter and assistant.....	1 40
	3 brass treadles, \$36; 2 days, plumber and assistant, \$8.....	24 00
	1 basin, plug, and chain	44 00
	2 days, gas fitter and assistant.....	1 60
	2 days, plumber and assistant	8 00
	2 days, gas fitter and assistant	8 00
	2 days, gas fitter and assistant	8 00
	do.....do.....	8 00
	1 day, plumber and assistant.....	4 00
	2 days, gas fitter and assistant	8 00
	18 hooks, 54 cents; 3 frillings, 75 cents; 2 sets brackets, \$6.....	7 29
	2 days, gas fitter and assistant, \$8; 1 day, bricklaying, \$2 50	10 50
	12 1-inch 4, with side outlet	3 00
	1 dozen brackets, \$1 50; 2 days, gas fitter and assistant, \$8	9 50
	1 gas key and torch	1 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. T. Dove—Continued	1 day, gas fitter and assistant.....	\$4 00	
	9 globes, \$7 20; 2 brackets, \$9 50.....	16 70	
	1 day, gas fitter and assistant, \$4; casting for front range, \$2 50	6 50	
	2 dozen gum plugs, \$12; 6 chamois, \$7 50	19 50	
	1 day, gas fitter and assistant.....	4 00	
	do.....do.....	4 00	
	13 fire-bricks, \$1 30; 1½ day, plumber and assistant, \$6.....	7 30	
	1 day, gas fitter and assistant.....	4 00	
	1 flexible, \$9; fine shade, \$1 25; 1 day, gas fitter and assistant, \$4.....	14 25	
	½ day, plumber and assistant	2 00	
	1 14-inch basin, \$2 75; ½ day, plumber and assistant, \$2.....	4 75	
	1 day, gas fitter and assistant.....	4 00	
	2 1-light bracket	9 00	
	15 feet flexible tubing, \$3 75; 6 filling, \$1 50; 14 feet gas pipe, \$2 80.....	8 05	
	12 hooks, 36 cents; 2 days, gas fitter and assistant, \$8.....	8 36	
	12 clamps, \$2 40; 1 day, gas fitter and assistant, \$4	6 40	
	1 scrol bracket, \$1 50; 1 day, gas fitter and assistant, \$4.....	5 50	
	1 day, plumber and assistant, \$4; 12 iron screws, bolts, and nuts, \$3.....	7 00	
	1 day, plumber and assistant, \$4; 1 day, gas fitter and assistant, \$4	8 00	
	1 flexible	10 00	
	5 dozen globes, \$60; 1 day, gas fitter and assistant, \$4.....	64 00	
	Hanging and fitting 3 signal bells.....	75 00	
	1 day, gas fitter and assistant, \$4; 1 day, plumber and assistant, \$4.....	8 00	
	2 silver basin cocks, \$8; 12 torches, \$18.....	26 00	
	1 day, plumber and assistant, \$4; 1 day, gas fitter and assistant, \$4.....	8 00	
	2 light pendants.....	24 00	
	2 days, gas fitter and assistant.....	8 00	
	6 castings for furnace, 95 pounds, at 3½ cents		\$570 35
W. M. Ellis & Bro.....	Binding the following documents, 1st session 36th Congress, in sheep, viz:		3 32
J. B. Smith & Co.....	470 copies executive documents, volume 4, for Interior Department.....	235 00	
	255 copies executive documents, volumes 4 and 9, for members of Congress.....	255 00	

Samuel T. Butterworth.....	67 00
T. C. Theaker.....	23 00
Samuel Torbert.....	78 00
	40 00
	5 00
Witness before Covode committee, 9 days, \$18; 480 miles' travel, \$48.....	703 00
Stationery account.....	66 00
5 horses and carriages, from December 1 to 31, 1860, inclusive, at \$2 per day.....	23 00
1 saddle horse, for same time, at \$1 50 per day.....	310 00
	46 50
Newspaper account.....	356 50
Hack hire for the Enrolling Committee, for 2d session 36th Congress.....	50 00
Stationery.....	3 00
do.....	20 51
Binding (stationery account) sundry documents for use of members 1st session 36th Congress.....	19 52
Newspaper account.....	14 75
Newspaper.....	50 00
do.....	50 00
Newspaper account.....	50 00
Newspaper, Boston Herald, for Hon. W. D. Brayton.....	50 00
1 dozen mats.....	6 00
1 dozen fancy feather dusters.....	12 00
2 dozen fancy feather dusters, at \$22 and \$30.....	44 00
3 gross brown Windsor soap, at \$18.....	52 00
2 $\frac{5}{8}$ dozen hair brushes.....	54 00
2 $\frac{1}{3}$ dozen hair brushes.....	36 25
3 $\frac{1}{2}$ dozen nail brushes, at \$8 50.....	32 00
2 $\frac{1}{2}$ dozen French hair brushes, at \$18.....	28 33
2 dozen sheep skins, at \$30.....	45 00
	60 00
5 days, witness before select committee on special message President.....	363 58
Witness before select committee on special message President.....	10 00
Newspaper account.....	6 00
Stationery.....	46 93
do.....	25 00
do.....	25 00
do.....	23 41
do.....	21 69
James Armstrong.....	
W. S. Bishop.....	
Reese B. Brabson.....	
J. B. Haskin.....	
M. Butterfield.....	
Reese B. Brabson.....	
William Helmick.....	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. Stewart	Stationery	-----	\$20 04
C. B. Sedgwick	do	-----	18 17
Job W. Angus	Putting down carpet in offices	\$8 00	
	Putting up 6 sets curtains	12 00	
	Putting down carpet, P. B. and Gds.	4 00	
	Putting up 4 sets curtains	8 80	
	Putting down 1 carpet, Committee on Patents	4 00	
	Hanging 6 sets curtains	12 00	
	Cleaning hall carpet	60 00	
	3 sets curtains	6 00	
	Putting down eight carpets	32 00	
	Putting up nine sets curtains	18 00	
	Putting up eight sets curtains	16 00	
	Repairing carpet, 2 pieces binding, Committee of Claims	2 00	
	Making two gangways for trucks	5 00	
	12 paste boxes	6 00	
	3 door-springs	3 50	
	Staples and knobs for do	50	
	Hanging weights to corridor doors	1 00	
	Repairing one lock	50	
	Repairing one key, for engineers	50	
	Repairing lock	1 00	
	Repairing case, Committee of Ways and Means	50	
	Repairing hat-rack	1 00	
	Repairing lock, hall door	50	
	Putting up three cornices, Naval Affairs	1 50	
	Key water-closet	75	
	1 key to desk, Revolutionary Claims	50	
	Repairing lock	50	
	Easing door	1 00	
	Repairing chairs	3 50	
	Repairing gas-room doors	5 00	

Repairing hall desks.....	2	00
1 light glass, hall door.....	1	00
Setting same and materials.....	2	00
1 bundle sash cord.....	1	00
42 papers carpet tacks.....	4	20
2 door-springs, \$2; 2 brushes, \$1.....	3	00
Furnishing cord and hanging cord on doors.....	1	00
Repairing lock, book-room.....	1	00
Repairing and varnishing boxes, Speaker's stand.....	1	00
Hooks on folding-room doors.....	1	50
60 knobs, for desks.....	7	50
1,000 feet cullings, \$20; 61 feet $\frac{1}{2}$ -inch selects, \$2 44.....	22	44
200 feet 16-foot studs, \$4; 500 feet $\frac{3}{4}$ yellow pine, \$20.....	24	00
Cartage.....		75
3 gallons varnish.....	9	00
5 dozen papers carpet tacks.....	6	00
2 quires sand paper.....	1	00
Hanging glass, folding room.....	3	00
12 knobs, for drawers, hall desks.....	1	50
Putting on and repairing same.....	9	00
1 door key, engine room.....	1	00
Repairing step ladder.....	1	00
1 gallon telf.....		80
1 gross screws, 80 cents; 3 brushes, 75 cents.....	1	45
Setting 1 light, plate glass.....	2	00
Hanging fly-doors.....		50
Pulley for same.....		25
Setting glass, House library.....	2	00
Putting up shelving in House library.....	12	00
Repairing House hall door.....	1	00
2 sets glass in House hall door.....	3	00
6 papers tacks.....		75
Making and hanging shutters, gas-room.....	6	00
24 papers carpet tacks.....	2	40
Hanging sash.....	2	50
Varnishing 5 large chairs.....	2	50
Varnishing 5 small chairs.....	1	25
1 fire screen, 50 cents; 1 sofa, \$1 50; 1 table, \$1.....	3	00
Varnishing 1 washstand.....		50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued.....	Cleaning and varnishing 1 large bookcase, folding room	\$2 00	
	Cleaning 2 tables and 2 bookcases.....	3 00	
	Varnishing 1 washstand.....	50	
	Varnishing 2 desks	1 50	
	3½ pounds glue, \$1 12; 72 papers carpet tacks, \$7 20.....	8 32	
	2½ pounds pumice stone.....	50	
	Laying floor engine room.....	10 00	
	4 sets oval mouldings.....	2 00	
	Hanging 12 pairs fly-doors.....	6 00	
	Putting in 7 spring hinges and furnishing same	42 00	
	Window curtains, cornice, fringe, &c., folding room.....	50 00	
	1 sofa, folding room	40 00	
	6 chairs, \$90; 1 mirror, \$60	150 00	
	1 desk, \$30; 1 desk, \$20	50 00	
	60 yards green cloth, \$4½, hall.....	270 00	
	25 yards blue cloth, for representatives' and speaker's tables	112 50	
	2 dozen skins red leather, at \$30.....	60 00	
	1 clock, for folding room.....	15 00	
	20 carpet needles, 20 cents; 1 paper carpet needles, 15 cents	35	
	200 furniture nails, \$10; 2 papers plated nails, \$10	20 00	
	6 papers copper tacks, \$6; 2 dozen 14-ounce tacks, \$250.....	8 50	
	1 4-inch tumbler lock.....	2 00	
	23 pounds sheet brass, \$11 50; 1 pair shears, \$3.....	14 50	
	10 papers gimp tacks, \$1; 8 papers carpet tacks, 50 cents.....	1 50	
	2 pounds copper tacks.....	2 00	
	1 pair white door knobs.....	1 00	
	1 dozen best shoe knives, \$2; 1 dozen whetstones, \$3.....	5 00	
	13 pounds sheet zinc.....	3 50	
	Putting down 15 carpets.....	60 00	
	Hanging 31 sets curtains	64 00	
	Repairing carpet, Ways and Means.....	2 00	
	Repairing curtains, retiring room	1 00	

Repairing carpet, Sergeant-at-Arms.....	75
Putting down 1 carpet.....	4 00
Hanging 3 sets curtains.....	6 00
Cleaning and putting down carpet.....	6 00
Making set curtains, folding room.....	5 00
Putting up 1 set curtains.....	2 00
Putting down 1 carpet.....	4 00
Making and carpeting, Sergeant-at-Arms.....	14 20
2 pounds thread.....	2 50
Putting down oil-cloth.....	10 50
Making 350 yards carpet, for House hall, at 20 cents.....	70 00
Repairing and laying old carpet.....	1 75
Cleaning carpet, chief clerk's room.....	2 00
Laying 2 carpets.....	8 00
Hanging 2 sets curtains.....	4 00
Repairing curtains, east retiring room.....	1 00
1 piece oil-cloth.....	75
Hanging 4 sets curtains.....	8 00
Repairing curtains, Military Affairs.....	50
Laying carpet, Post Office and Post Roads.....	4 00
Hanging 3 sets curtains.....	6 00
Hanging 3 sets cornices.....	1 50
Laying carpet in gallery.....	100 00
Making and hanging 4 lace curtains.....	20 00
Making and putting down 34 yards carpet at Speaker's and Clerk's stands.....	6 80
4 yards cotton, 50 cents; 27½ yards gimp, \$4 95.....	5 45
2 pieces gimp band, \$1 20; 2 sets hooks, 50 cents.....	1 70
1 pound carpet thread.....	1 50
9½ yards striped curtain.....	13 69
1 cornice, \$6; 21½ yards gimp, \$6 45.....	12 45
1 pair side loops, \$2 50; 2 loop hooks, 50 cents.....	3 00
1 set tassels.....	4 00
1 hank thread, 25 cents; 2 rolls, 12 cents.....	37
3 dozen curtain rings.....	30
18¾ yards buff selicia, 30 cents.....	5 60
2 spools cotton, 12 cents; ¼ pound thread, 38 cents.....	50
4 yards twilled cotton.....	50
W. T. Dove.....	4 50
2 ceiling plates, 50 cents; gas fitter and assistant, 1 day, \$4.....	

\$1,704 52

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. T. Dove—Continued.....	Gas fitter and assistant, 1 day, \$4; plumber and assistant, 1 day, \$4.....	\$8 00	
	Plumber and assistant, 2 days	8 00	
	1 day, gas-fitter and assistant.....	4 00	
	2 plated basin plugs, \$3 50; 3 feet plated chain, 75 cents.....	4 25	
	1 day, plumber and assistant, \$4; 1 day, gas fitter and assistant, \$4	8 00	
	1 day, plumber and assistant, \$4; 1 day, gas fitter and assistant, \$4	8 00	
	14 pounds solder, \$4 90; 3 pounds fine solder, 38 cents; 2½ pounds block tin, 40 cts	7 04	
	4 globe holders, \$1; 2 pounds lead pipe, 20 cents; basin cock-coupling, 50 cents.....	1 70	
	Silver-plated cock	4 00	
	1 day, gas fitter and assistant	4 00	
	1 day, gas fitter and assistant	4 00	
	Plaster, 31 cents; cement, 25 cents; silver-plated basin-cock, \$4.....	4 56	
	8 pounds fine solder, \$3 04; 1 day, plumber and assistant, \$4.....	7 04	
	1 day, gas fitter and assistant.....	4 00	
	½ dozen hand-saw files, 75 cents; and plumber and assistant, 1 day, \$4.....	4 75	
	8 pounds trimmed copper, \$4 48; ½ day, plumber and assistant, \$2	6 48	
	2 dozen brass screws, \$1; 1 paper tacks, 25 cents.....	1 25	
	1 day, plumber and assistant, and ½ day do. do.....	6 00	
	1 silver-plated basin plug, \$1 75; 2 feet silver-plated chain, 50 cents.....	2 25	
	½ day, plumber and assistant.....	2 00	
	1 — an l fixtures, \$11 10; 1 day, gas fitter and assistant, \$4.....	15 10	
	1 day, gas fitter and assistant, \$4; 1½ day, do. do., \$6.....	10 00	
	10 pounds solder, \$5 60; 1 day, plumber and assistant, \$4.....	9 60	
	1 day, plumber and assistant	4 00	
	7 feet 10 inches gas pipe, \$1 57; ½ day, gas fitter and assistant, \$2	3 57	
	1 day, gas fitter and assistant.....	4 00	
			\$150 09
			8 00
Sibley & Guy.....	1 stove, House library.....	72 50	
C. W. C. Dunnington.....	Capitol police, pay-roll for January, 1861.....	45 83	
A. K. Arnold	do.....do.....	45 83	
Samuel J. Johnson	do.....do.....	45 83	
J. T. Ball.....	do.....do.....	45 83	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
John Johnson.....	Laborer, pay-roll for January, 1861	\$46 50	
Frank Tavenes	do.....do.....	46 50	
John Massey.....	do.....do.....	46 50	
Ed. M. Thomas.....	do.....do.....	46 50	
John Costin.....	do.....do.....	62 00	
Levi Neal.....	do.....do.....	46 50	
William H. Smith.....	do.....do.....	46 50	
William Troine	do.....do.....	46 50	
Rinaldo Griffin	do.....do.....	46 50	
			\$646 00
Samuel Lee.....	Mail boy, pay-roll for January, 1861	75 00	
A. G. Myers	do.....do.....	75 00	
			150 00
William Hartough.....	Services as messenger in south wing for January, 1861.....	-----	125 00
William Tudge.....	Temporary mail boy	50 00	
Henry Schreiner.....	do.....do.....	50 00	
			100 00
Isaac Entwisle.....	Engineer, pay-roll for January, 1861	125 00	
M. R. Shankland.....	do.....do.....	100 00	
D. A. McElhone.....	do.....do.....	100 00	
Joseph Mansfield	do.....do.....	62 00	
Thomas Hunt.....	do.....do.....	62 00	
Sylvester Adams	do.....do.....	62 00	
William Sanderson	do.....do.....	62 00	
William Mooney	do.....do.....	62 00	
			635 00
J. B. Bartholow.....	4 dozen packages Virginia tripoli.....	-----	4 00
Julius Bien	Lithographing and printing maps for Coast Survey, 1859, viz:		
	Map No. 1, printing 6,550 copies, at \$2 25 per 100	147 37½	
	Map No. 2.....do.....6,550...do.....2 00.....do	131 00	
	Map No. 3.....do.....6,550...do.....2 75.....do	180 12½	
	Map No. 6.....do.....6,550...do.....1 50.....do	98 25	

Map No. 4.....do.....6 550...do.....1 75.....do.....	114 62½	1,250 39
Map No. 9.....do.....6 550...do.....1 75.....do.....	114 62½	
Map No. 11.....do.....6 550...do.....2 75.....do.....	180 12½	
Map No. 14.....do.....6 550...do.....84.....do.....	55 02	
Map No. 22.....do.....6 550...do.....1 50.....do.....	98 25	
Map No. 36.....do.....6 550...do.....1 50.....do.....	98 25	
Map No. 38.....do.....6 550...do.....50.....do.....	32 75	
George W. Alexander.....		
Binding, 1st session 36th Congress, (Congressional Globe and Appendix,) viz:		
564 copies, part 1, at 60 cents per volume	338 40	
1,170 copies, part 2, at 60.....do.....	702 00	
897 copies, part 3, at 60.....do.....	538 20	
32 copies, part 4, at 60.....do.....	19 20	
James B. Smith & Co		1,597 80
Binding the following documents, 1st session 36th Congress, in sheep:		
255 copies Executive Documents, vol. 7, quarto, at \$1 25, House Representatives.....	318 75	
4..do.....do.....do.....do.....do.....United States Mint.....	5 00	
2..do.....do.....do.....do.....do.....Congress Library	2 50	
2..do.....do.....do.....do.....do.....Court Claims	2 50	
1..do.....do.....do.....do.....do.....Military Academy.....	1 25	
1..do.....do.....do.....do.....do.....Naval Academy	1 25	
Same, in calf:		
30 copies Executive Documents, vol. 7, quarto, at \$1 50, House Library.....	45 00	
10..do.....do.....do.....do.....do.....Office House Reps.....	15 00	
28..do.....do.....do.....do.....do.....Senate.....	42 00	
2 volumes newspapers, at \$3, for Office House Representatives.....	6 00	
1 volume House Journal, in sheep.....	1 00	
1 Executive Document, 1st session 35th Congress	75	
450 titles and lettering books, House Library, at 20 cents.....	90 00	
10 reams printing paper, 24 by 38, for guards, Coast Survey, at \$5 17½.....	51 75	
228 volumes House Journal put in binder's boards and lettered for governors of States, at 25 cents.....	57 00	
H. H. Pangborn.....	639 75	
L. D. Johnson	428 00	
Nathan McDowell.....	93 00	
Augustus F. Potts.....	93 00	
William F. Norris.....	62 00	
.....do.....do.....do.....	62 00	
		310 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
C. Bohn	500 Department and Congressional Directories, plans and maps, at 45 cents each.....	-----	\$225 00
George N. Beall.....	Services in stationery and folding room, House of Representatives.....	-----	100 00
F. McClerkey	Services in the office House of Representatives for January, 1861.....	-----	100 00
John B. Dade.....	Services as messenger in the hall House of Representatives from May 4 to May 31, 1860; resolution January 14, 1860.....	-----	60 00
M. Troop	Printing 420 bill heads at \$10 per 100.....	-----	42 00
E. L. Lowe.....	Witness before select committee on President's message, 2 days.....	\$4 00	
	Travel.....	16 60	
			20 60
J. W. Toorney	Witness before select committee on President's message, 1 day.....	2 00	
	Travel.....	8 00	
			10 00
Benjamin Berry	Witness before select committee on President's special message, 3 days.....	6 00	
	Travel, 30 miles.....	3 00	
			9 00
James Hicks, jr	Witness before select committee on President's special message, 2 days.....	4 00	
	Travel.....	3 00	
			7 00
Daniel Ratcliffe	Witness before select committee on President's special message, 2 days.....	-----	4 00
Godard Bailey.....	Witness before select committee on President's special message, 2 days.....	-----	4 00
J. J. Butler.....	9 dozen quarts writing fluid	45 00	
	Less amount paid freight.....	6 93	
			38 07
A. B. Olin.....	Stationery	-----	24 59
E. P. Waltin.....	do	-----	24 49
W. H. Dimmick.....	do	-----	24 44
W. Milward	do	-----	24 33
Charles Robinson.....	do	-----	23 78
J. M. Harris	do	-----	22 67
J. A. Gurley.....	do	-----	20 33
John T. Nixon	do	-----	18 94
G. W. Scranton.....	do	-----	16 50

J. A. Bingham.....	do	15 43
Thomas G. Davidson.....	do	10 11
J. B. Smith & Co.....	Binding documents, charged stationery account	4 00
Joseph Shillington.....	9 dies for folding room, at \$2 each	18 00
	3..do.....do.....	6 00
	1 quart bottle blue ink.....	10 00
Joseph Shillington.....	Stationery for Hon. T. G. Davidson	34 00
Samuel R. Curtis	Newspaper account	2 00
W. S. Kenyon.....	do	50 00
J. N. Morris	do	50 00
Miles Taylor	do	50 00
C. H. Van Wyck	do	50 00
Lansing Stout.....	do	50 00
J. Washburn, jr.....	do	35 00
Bondurant, Elliot & Shiel.....	Richmond Daily Whig for Hon. R. B. Brabsen	1 50
A. R. Parker.....	Map clerk, pay-roll, January, 1861.....	1 00
George Chipman	do.....do	180 00
Rufus Renticco.....	do.....do	150 00
Joseph P. Allyn.....	do.....do	150 00
Joseph Peacock.....	do.....do	150 00
George H. Chapman.....	Temporary clerk, pay-roll for January, 1861	780 00
J. R. Briggs, jr.....	do.....do.....do	150 00
William Averill	do.....do.....do	150 00
C. H. Upton	Clerk to Committee on Naval Affairs, for January, 1861	450 00
James Parker	Clerk to Committee on Invalid Pensions, for January, 1861.....	124 00
J. E. Mendenhall.....	Clerk to Committee on Post Office and Post Roads, for January, 1861.....	124 00
Hugh Young.....	Clerk to Committee on Territories, for January, 1861.....	124 00
J. H. Hobbs.....	Clerk to Committee on Judiciary, for January, 1861.....	124 00
M. Smith.....	Clerk to Committee on Commerce, for January, 1861.....	124 00
S. T. Sawyer.....	Clerk to Committee of "Thirty-three," for January, 1861.....	124 00
B. G. Daniels	Clerk to Committee on Accounts, for January, 1861.....	124 00
Jno. F. Braudtz	Clerk to Committee on Elections, for January, 1861.....	124 00
J. J. Coombs.....	Clerk to Committee on Military Affairs, for January, 1861	124 00
Benjamin F. Hutchins.....	Clerk to Committee on Indian Affairs, for January, 1861.....	124 00
Judson S. Brown	Clerk to Committee on Public Lands, for January, 1861	124 00
Ben Perly Poor.....	Clerk to Committee on Foreign Affairs, for January, 1861.....	124 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. B. Ford, jr	3 cards fine pocket knives, "A" \$30 50, "B" \$39, and "C" \$58	-----	\$128 00
Miles Taylor	Stationery	-----	25 00
J. H. Reynolds	do	-----	25 00
C. A. Trimble	do	-----	24 44
Thomas D. Eliot	do	-----	23 50
James Wilson	do	-----	20 77
John Wood	Stationery, 2d session	-----	20 28
William Windom	Stationery	-----	19 70
John Wood	Stationery, 1st session	-----	14 56
J. J. McRea	Stationery	-----	12 72
J. C. Robinson	do	-----	10 99
M. F. Conway	Newspaper account	-----	50 00
Henry A. Edraundson	do	-----	50 00
M. A. O'ero	do	-----	35 00
James Wilson	do	-----	23 50
W. D. Potter & Co	Cincinnati Commercial, for—	-----	
	Hon. C. L. Vallandigham	\$2 50	
	A. G. Porter	2 50	
	John Sherman	5 00	
	W. Allen	2 50	
	C. D. Martin	2 50	
	Richmond Index, for Hon. C. L. Vallandigham	-----	15 00
G. H. Hopkins	Excess of postage on letters and packages, from June 27 to December 31, 1860	-----	1 00
W. Jones	1 new seal on steel, for House of Representatives	12 00	80 44
J. Baumgarten	Recutting on seal instead	6 75	
	Repairing 2 water-coolers	-----	18 75
James Skirving	Witness before select committee on President's special message, 2 days	4 00	10 00
P. T. Dawson	Travel, 80 miles	8 00	
O. K. Hillard	Witness before select committee on President's special message, 2 days; 8 miles	-----	12 00
		-----	12 00

C. Ferrandini	Witness before select committee on President's special message	10 00
J. Tyler Powell	Witness, 3 days, before select committee on President's special message	6 00
James B. Smith & Co	Binding the following documents, 1st session 36th Congress, in sheep, viz:	
	255 copies quarto Ex. Docs., volume 11, part 2, House Representatives, at \$1 25	318 75
	67 copies quarto Ex. Docs., volume 11, part 2, executive departments, at \$1 25	83 75
	67 copies quarto Ex. Docs., volume 7, executive departments, at \$1 25	83 75
	23 copies quarto Ex. Docs., volume 7, for legations, at \$1 25	28 75
	23 copies quarto Ex. Docs., volume 11, part 2, for legations, at \$1 25	28 75
	78 copies quarto Ex. Docs., volume 11, part 2, Senators, at \$1 25	97 50
	78 copies quarto Ex. Docs., volume 7, Senators, at \$1 25	97 50
	40 copies quarto Ex. Docs., volume 7, State Department, at \$1 25	50 00
	40 copies quarto Ex. Docs., volume 11, part 2, State Department, at \$1 25	50 00
	4 copies quarto Ex. Docs., volume 11, part 2, United States mint, at \$1 25	5 00
	2 copies quarto Ex. Docs., volume 11, part 2, Congressional library, at \$1 25	2 50
	2 copies quarto Ex. Docs., volume 11, part 2, Court Claims, at \$1 25	2 50
	2 copies quarto Ex. Docs., volume 11, part 2, Military Academy, at \$1 25	2 50
	Same, in calf:	
	30 copies quarto Ex. Docs., volume 11, part 2, House library	45 00
	10 copies quarto Ex. Docs., volume 11, part 2, office House Representatives	15 00
	28 copies quarto Ex. Docs., volume 11, part 2, Senate	42 00
Van Ingen & Snyder	2 wood cuts, showing ground plan and location of the Public Printing Office	953 25
Charles R. Traip	Stationery	20 00
J. F. Farnsworth	do	45 20
S. F. Leake	do	22 21
W. H. & O. H. Morrison	3 bibles, for select committees	18 62
	4 copies Blue Book	3 00
	10 copies volume 1 Pacific Railroad Survey	14 00
		25 00
J. Baumgarten	Engraving plate, transfer, and printing for House Committee Ways and Means	42 00
Mary Thomas	Services in the ladies retiring room, from January 8 to 31, 1861, 24 days	37 45
H. A. Hening	5½ days work as bricklayer, and assistant, in boiler room	24 00
J. H. Boyd	Witness, 1 day, before select committee on President's special message	20 62
	Travel	2 00
		8 00
Cornelius Boyle	Witness, 2 days, before select committee on President's special message	10 00
Luther C. Carter	Newspaper	4 00
Charles Case	do	48 50
		39 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. S. Mastien & Co.....	Presbyterian, for—		
	Hon. Robert McKnight	\$2 50	
	Allison White	2 00	\$4 50
A. B. Merton.....	Compensation as messenger in the House of Representatives, under resolution of March 9, 1800, from May 18 to June 14, 1858, at \$1,200 per annum, in lieu of \$3 per day, as paid		
John Covode.....	Newspaper.....		8 30
T. B. Florence	do		50 00
D. Kilgore.....	do		50 00
C. O. Rogers	“ Boston Daily Journal ” for—		46 50
	Hon. D. W. Somes.....	3 37	
	A. Burlingame	3 25	
	M. W. Tappan	6 00	
	J. J. Perry.....	1 50	
	E. B. French.....	3 00	
	Eli Thayer	3 00	
	A. H. Rice.....	3 25	
R. W. Gibbs	“ Daily South Carolinian ” for Hon. L. M. Keitt.....		23 37
T. L. Anderson.....	Stationery		6 00
J. M. Quarles	do		24 78
E. S. Martin	do		24 72
J. W. Noell.....	do		19 31
W. Kellogg.....	do		16 95
Job W. Angus	do		14 05
	12 packing boxes.....	30 00	
	37 packing boxes.....	92 50	
	1 set casters.....	1 00	
	2 door keys	2 00	
	1 door spring	1 00	
	1 lock for door	1 00	
	Repairing chair	25	

Repairing stool.....	75
Repairing lock	1 00
2 hooks on door	50
9 drawer keys	4 50
2 door keys	2 00
Divisions in boxes	50
1 knob	50
4 keys for hall desks	2 00
1 caster on chair	50
Repairing 3 drawers in post office	2 50
3 pairs hinges for post office	1 50
4 hooks for doors	75
Repairing lock	50
1 set casters, document room	1 00
1 mop head	1 00
Repairing lock	50
Repairing chairs	75
Repairing 3 locks	1 00
1 stand for reading clerk	2 00
2 knobs for hall door	1 00
1 knob for hall door	50
Handle for wood hod	50
Taking down and repairing doors	50
2 pairs spring hinges	24 00
3 keys for reporters' gallery	1 00
1 set casters for hall chairs	1 50
1 set casters for enrolling room	1 00
Lock in water closet	1 75
1 set casters, room No. 24	1 00
Repairing desk lock	50
Door key for bath room	1 00
Repairing curtains in enrolling room	25
Repairing lock	50
Glass in case, Judiciary Committee room	50
1 key for same	50
1 screwdriver	75
Cleaning and varnishing doorkeepers' room	3 00
1 lock and key	1 50
Lining doors with silk	1 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued	Repairing desk in hall	\$0 50	
	1 set casters, Committee on Public Buildings and Grounds	1 00	
	4 keys to hall desks	1 50	
	1 key, Committee on Roads and Canals	50	
	Repairing water-cooler	1 00	
	Screen, Clerk's office	5 00	
	Repairing lock and 1 key	1 50	
	Repairing lock, Committee on Public Buildings	50	
	3 keys for hall desks	1 50	
	1 towel rack for bath room	2 00	
	Hanging 5 looking-glasses and frame hooks	2 00	
	6 cane seat chairs, at \$3	18 00	
	5 glasses, at \$5	25 00	
	4 soap boxes for bath room	1 50	
	1 door knob for folding room	75	
	Repairing drawer	50	
	1 caster on chair, Committee on Claims	25	
	2 locks, Committee on Invalid Pensions	2 00	
	1 lock for folding room	1 00	
	Putting light glass in Covode room	50	
	Repairing lock in Covode room	75	
	Repairing lock in reporters' gallery	1 50	
	2 keys for reporters' gallery	1 00	
	Repairing chairs, east retiring room	3 00	
	1 set casters for lobby chair	1 00	
	1 set casters, Committee on Revolutionary Pensions	1 00	
	Repairing chairs	1 00	
	Grating for bath room	75 00	
	12 packing boxes	30 00	
			\$375 50
F. Emmerick	Use of 2 horses and carriage for office of House of Representatives for November and December, 1860, and January, 1861, 92 days, at \$2 each per day		368 00

J. W. Jones.....	For use of 1 horse and wagon from September 1, 1860, to February, 1861, 153 days, at \$2.....	306 00
M. E. Flanagan	Services on land maps, November, 1860	150 00
Martin Lewis	1 day as witness before select committee to investigate alleged frauds in Interior Department.....	2 00
	Travel from and to Baltimore	8 00
W. A. Howard	Expenses incurred by the select committee appointed January 9, 1861	10 00
T. M. Bristow.....	Stationery	23 75
C. Aldrich.....	do	25 00
R. Mallory.....	do	25 00
E. B. Pottle.....	do	25 00
J. B. Alley.....	do	23 90
Jno. F. Potter	do	23 89
W. D. Brayton.....	do	23 46
W. Montgomery	do	23 02
C. L. Vallandigham.....	do	22 88
R. McKnight.....	do	22 71
E. G. Spaulding.....	do	22 51
S. O. Peyton.....	do	21 15
L. T. Moore.....	do	21 11
O. R. Singleton.....	do	21 05
S. Edgerton.....	do	20 84
H. C. Longnecker.....	do	20 53
J. V. Wright.....	do	20 37
W. S. Kenyon.....	do	19 87
H. L. Dawes.....	do	19 49
John Carey	do	19 05
W. T. Avery.....	do	17 88
James Buffinton	do	17 34
E. Joy Morris	do	16 02
W. Allen	do	15 33
W. Winston	do	15 12
W. E. Somes.....	do	14 48
R. E. Fenton.....	do	13 73
A. R. Boteler.....	do	13 60
John Hickman	do	12 64
J. A. Logan.....	do	10 56
W. Winslow	Newspaper account.....	50 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
John B. Alley.....	Newspapers.....	-----	\$50 00
W. E. Simms.....	do.....	-----	50 00
R. Mallory.....	do.....	-----	50 00
W. Montgomery.....	do.....	-----	50 00
J. F. Potter.....	do.....	-----	48 50
S. O. Peyton.....	do.....	-----	48 00
J. A. Logan.....	do.....	-----	45 57
H. L. Dawes.....	do.....	-----	41 48
James Parker.....	Services as clerk to Committee on Invalid Pensions from February 1 to March 4, 1861.	-----	128 00
W. A. Howard.....	Newspapers.....	-----	45 00
W. A. Howard.....	Stationery.....	-----	21 24
W. M. Dunn.....	do.....	-----	20 02
Chapin Hall.....	do.....	-----	17 42
Amand Griffin.....	Washing 18 $\frac{7}{12}$ dozen, at 50 cents.....	-----	9 29
C. W. Boteler.....	1 dozen feather dusters.....	-----	27 00
Alexander H. Rice.....	Newspaper account.....	-----	50 00
I. I. Stevens.....	Newspapers.....	-----	50 00
C. F. Adams.....	do.....	-----	50 00
H. F. Clark.....	do.....	-----	50 00
J. K. Morehead.....	do.....	-----	50 00
J. R. Riggs.....	do.....	-----	50 00
H. C. Burnett.....	do.....	-----	50 00
J. W. Stevenson.....	do.....	-----	50 00
Burton Craige.....	do.....	-----	50 00
S. H. Woodson.....	do.....	-----	50 00
J. B. McKean.....	do.....	-----	50 00
D. C. DeJarnette.....	do.....	-----	43 00
C. Delano.....	Stationery.....	-----	4 74
J. T. Harris.....	do.....	-----	9 87
J. H. Campbell.....	do.....	-----	12 62
J. McQueen.....	do.....	-----	12 91
H. G. Blake.....	do.....	-----	13 74

S. H. Woodson.....	do.....	13 78
George Briggs.....	do.....	13 97
C. B. Tompkins.....	do.....	15 00
C. H. Larrabee.....	do.....	15 44
W. B. Stokes.....	do.....	16 47
A. H. Rice.....	do.....	17 37
R. H. Duell.....	do.....	18 38
E. McPherson.....	do.....	19 13
W. W. Boyce.....	do.....	19 50
J. B. McKean.....	do.....	19 75
J. H. Reagan.....	do.....	20 83
L. C. Carter.....	do.....	20 85
O. S. Ferry.....	do.....	21 37
H. W. Davis.....	do.....	21 61
J. W. Killinger.....	do.....	22 73
C. H. Train.....	do.....	24 37
E. B. French.....	do.....	24 62
Alfred Wells.....	do.....	24 91
C. F. Adams.....	do.....	25 00
F. Bennett.....	do.....	5 90
Folding documents in June, 1860.....		
Pay-roll, folding documents, for October, 1860.....		
A. B. Reed.....	do.....	\$100 00
Samuel Phillips.....	do.....	100 00
H. H. Clark.....	do.....	100 00
H. G. Divine.....	do.....	77 50
J. R. Zimmerman.....	do.....	77 50
J. J. Harrison.....	do.....	77 50
N. C. Stone.....	do.....	77 50
A. H. Alcott.....	do.....	77 50
Z. Brown.....	do.....	62 00
W. J. Harris.....	do.....	62 00
Theo. Blague.....	do.....	93 00
G. T. Whittington.....	do.....	93 00
B. Stainsby.....	do.....	93 00
W. C. Dodge.....	do.....	77 50
Stillman Moore.....	do.....	93 00
W. Allen.....	do.....	77 50
Joshua Howard.....	do.....	77 50
Hugh Young.....	do.....	77 50
J. S. Kellogg.....	do.....	77 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives—Continued.

To whom paid.	For what object.	Amount.	Total.
Edward Darling	Pay-roll, folding documents, for October, 1860.....	\$77 50	\$1,788 00
J. T. Chauncey	do.....do.....	46 50	
Lewis Saunders.....	do.....do.....	46 50	
Thomas Martin.....	do.....do.....	46 50	
A. B. Reed.....	Pay-roll, folding documents, for November, 1860.....	100 00	1,789 00
Samuel Phillips	do.....do.....	100 00	
H. H. Clark.....	do.....do.....	100 00	
H. G. Divine	do.....do.....	75 00	
J. R. Zimmerman	do.....do.....	75 00	
J. J. Harrison.....	do.....do.....	75 00	
N. C. Stone.....	do.....do.....	75 00	
A. H. Alcott.....	do.....do.....	75 00	
Zachariah Brown.....	do.....do.....	60 00	
W. J. Harris.....	do.....do.....	60 00	
Theo. Blague.....	do.....do.....to December 2, 1860.....	96 00	
G. T. Whittington	do.....do.....	90 00	
B. Stainsby.....	do.....do.....to December 2, 1860.....	96 00	
W. C. Dodge.....	do.....do.....do.....	80 00	
Stillman Moore.....	do.....do.....do.....	96 00	
W. Allen	do.....do.....do.....	80 00	
J. Howard	do.....do.....do.....	80 00	
Hugh Young.....	do.....do.....do.....	80 00	
J. S. Kellogg	do.....do.....do.....	75 00	
Edward Darling	do.....do.....do.....	80 00	
J. T. Chauncey.....	do.....do.....do.....	45 00	
Lewis Saunders.....	do.....do.....do.....to December 2, 1860.....	48 00	
Thomas Martin.....	do.....do.....do.....	48 00	
M. Hagerty	Pay-roll, folding documents, for December, 1860.....	1 42	1,789 00
W. T. Barnes	do.....do.....	3 07	
C. Franklin	do.....do.....	2 00	

Joseph Simonds	do	do	94
James Taylor	do	do	3 45
John T. Bryan	do	do	5 35
J. N. Campbell	do	do	3 75
H. H. Steele	do	do	75
A. Swigert	do	do	3 63
J. L. Bryan	do	do	38
John P. Chase	do	do	4 28
W. F. Harrison	do	do	4 54
James Hough	do	do	4 95
S. Lemon	do	do	6 05
Frank Smith	do	do	2 81
W. J. Cook	do	do	2 66
J. Knight	do	do	2 17
Thomas Wilson	do	do	1 72
F. C. Harris	do	do	60
S. M. Carpenter	do	do	4 22
H. McEldee	do	do	1 87
W. Berault	do	do	52
Pay-roll, folding documents, for December, 1860			61 13
George T. Whittington	do	do	93 00
J. S. Kellogg	do	do	93 00
N. C. Stone	do	do	77 50
H. G. Divine	do	do	77 50
Nicholas Du Bois	do	do	77 50
John T. Chauncey	do	do	46 50
Pay-roll, folding documents, for December, 1860			465 00
A. B. Reed	do	do	100 00
Samuel Phillips	do	do	100 00
H. H. Clark	do	do	100 00
J. R. Zimmerman	do	do	77 50
J. J. Harrison	do	do	77 50
A. H. Alcott	do	do	77 80
Z. Brown	do	do	62 00
W. J. Harris	do	do	62 00
Stationery			656 00
E. B. Washburne	do	do	25 00
William Vandever	do	do	25 00
G. H. Pendleton	do	do	23 03

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
B. Stanton	Stationery .....	.....	\$18 44
H. Waldron	do .....	.....	18 43
Green Adams	do .....	.....	17 70
J. K. McKenty	do .....	.....	15 08
Thomas Hardeman	do .....	.....	15 00
J. H. Thomas	do .....	.....	13 59
H. C. Burnett	do 1st and 2d sessions .....	.....	11 49
J. L. M. Curry	do .....	.....	5 46
J. M. Leach	do .....	.....	24 95
M. Lindley Lee	do .....	.....	24 91
A. B. Burnham	do .....	.....	24 53
Robert Hatton	do .....	.....	20 74
John P. Verree	do .....	.....	20 51
D. C. Leach	do .....	.....	17 67
J. M. Kunkel	Newspaper account .....	.....	50 00
D. E. Somes	do .....	.....	50 00
E. Babbit	do .....	.....	50 00
Steven C. Foster	do .....	.....	50 00
J. S. Merrill	do .....	.....	50 00
J. M. Ashley	do .....	.....	39 50
D. E. Sickles	do .....	.....	37 25
B. Stanton	do .....	.....	32 50
L. O'B. Branch	do .....	.....	25 00
S. A. Power	Folding documents in the office of the House of Representatives for the months of October, November, and December, 1860, and for January, 1861 .....	.....	400 00
J. A. Shindall	Folding documents in the office of the House of Representatives for the months of October, November, and December, 1860, and for January, 1861 .....	.....	400 00
E. H. Brink	Folding documents in the office of the House of Representatives for the months of October, November, and December, 1860, and January, 1861, at \$60 per month .....	.....	240 00
Z. Brown	62½ dozen of towels for the folding room, at 50 cents .....	.....	31 25
Thos. W. Phipps	Services in the folding room of the House of Representatives from December 1 to December 10, inclusive, at \$3 per day .....	.....	30 00

D. Biddleman	Services as laborer in folding room of the House of Representatives from 1st to 20th of March, 1860, at \$1 50 per day.....	30 00
Jas. A. Bowen	Services folding documents June 25, 1860.....	6 70
W. H. McKenney	Folding documents June 27, 1860.....	6 70
W. A. Groves.....	do	3 50
E. H. Webster	Newspaper account	50 00
G. B. Adrain.....	do	44 25
A. G. Porter.....	do	43 00
Thos. Ruffin	do	43 00
Gilman Marston.....	do	42 05
Thad. Stevens.....	do	41 55
J. Cochrane.....	do	41 25
John B. Clark.....	do	38 50
W. B. Maclay	do	38 00
Edward Wade.....	do	32 00
James Humphrey.....	do	30 50
R. A. Pryor.....	do	17 50
M. R. H. Garnett.....	do	3 30
J. B. Conway.....	Painting sign for heating and ventilating rooms.....	2 50
W. M. Ellis & Bro.....	25 grate bars, 750 pounds, at 3½ cents.....	26 25
A. G. Shaver.....	6 dozen patent erasers.....	31 38
C. B. Cochrane.....	Stationery	25 00
E. H. Webster	do	22 42
G. B. Adrain.....	do	21 07
E. Ward	do	16 89
R. A. Pryor.....	do	16 14
Z. B. Vance.....	do	15 24
W. Irwin.....	do	12 33
W. B. Maclay.....	do	10 22
D. Kilgore.....	do	21 83
S. S. Cox	do	21 54
James Craig	do	19 50
C. L. Beale	do	19 31
A. G. Jenkins.....	do	18 50
A. Rust.....	do	17 83
John Hutchins.....	do	17 78
John G. Davis	do	14 34
George S. Houston	do	7 49
S. Coburn.....	Newspaper account	50 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
John J. Perry.....	Newspapers.....	-----	\$49 00
J. E. Bouligny	do	-----	46 50
H. Maynard.....	do	-----	43 00
John A. McClernand.....	do	-----	40 50
C. A. Trimble.....	do	-----	1 50
J. A. Stewart.....	do	-----	50 00
J. R. Barrett.....	do	-----	39 32
T. J. Barr	Stationery.....	-----	19 10
F. W. Kellogg	do	-----	11 23
T. B. Florence	do	-----	10 77
J. T. Hall.....	do	-----	4 98
Alexander Gillespie.....	Compensation as assistant superintendent of document room of the House of Representatives of the United States, under resolution of March 9, 1860, from October 1 to December 5, 1858, 66 days, at \$1 88.....	\$118 80	
Do.....	Compensation as messenger in the hall of the House of Representatives of the United States, under said resolution, from December 6, 1858, to March 3, 1859, at the rate of \$1,200 per annum instead of \$3 per day, as paid.....	29 14	147 94
John Saller.....	Compensation as messenger in the House of Representatives of the United States, under the resolution of March 9, 1860, from December, 1858, to February 11, 1860, at the rate of \$1,200 per annum instead of \$3 per day, as paid.....	-----	124 24
Thomas H. Stockton.....	Compensation as chaplain to the House of Representatives of the United States for the 2d session 36th Congress	-----	750 00
G. W. Alexander	Binding Congressional Globe and Appendix : 495 copies, part 1, at 60 cents	297 00	
	951 copies, part 2, at 60 cents	570 50	
	1,793 copies, part 3, at 60 cents.....	1,075 00	
J. B. Smith & Co.....	Binding the following documents, 1st session 36th Congress, in sheep: 470 copies quarto, volumes 7 and 11, part 2, Interior Department.....	1,175 00	1,943 50
	3 copies House Journal for Clerk's office.....	1 50	
	3 copies Reports of the Court of Claims.....	1 50	

3 copies Message and Documents, calf; ditto, 6	1	83
For gathering, trimming, and inserting maps for 1,011 sets of Reports of Coast Survey, 40,440, at 10 cents per 100	40	44
For gathering, trimming, and inserting plates in 1,011 copies of Stevens's Report Pacific Railroad, volume 2, part —, 50,550, at 10 cents per 100	50	55
216 pounds best patent sperm candles, at 60 cents	1,270	82
Furniture and repairs, &c:	129	60
24 spit boxes, \$24; 4 packing boxes, \$10	34	00
33 packing boxes, at \$2 50	82	50
46 do do	115	00
7 do do	17	50
12 do do	30	00
6 spit boxes	6	00
Repairing 3 locks in Public Lands Committee room	75	
1 key for ditto	50	
Repairing 1 door for ditto	1	00
1 set casters for ditto	50	
Making 60 keys for hall desks	30	00
7 door keys for Revolutionary Claims Committee room	7	00
1 door key for Foreign Affairs Committee room	1	00
8 drawer keys for Private Land Claims Committee room	4	00
12 drawer keys for Commerce Committee room	6	00
2 square glass, with numbers, for post office	3	00
1 door key for gallery	75	
1 drawer key for House folding room	50	
6 desk keys for hall	3	00
1 drawer key for Committee of Claims room	50	
3 door keys for ditto	3	00
1 desk key for Sergeant-at-arms's room	50	
1 desk key for hall	50	
1 lock for Committee on Accounts room	1	50
1 key for hall desk	50	
Hanging fly door in connexion	50	
1 door key in Public Expenditures Committee room	1	00
Repairing doors in south lobby	1	00
2 oval glasses for outside doors	6	50
Putting 13 bolts on gallery	1	00
1 wood hod	1	00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued	1 door key in Roads and Canals Committee room	\$1 00	
	2 hat racks in Public Expenditures Committee room	40 00	
	2 stools for Sergeant-at-arms's room	8 00	
	1 square glass for book case in Committee on Accounts room	75	
	1 gallon turpentine for folding room	1 00	
	1 pair spring hinges	12 00	
	Repairing door lock	1 00	
	Repairing desk	50	
	1 door key	1 00	
	2 keys for hall desks	1 00	
	Strapping 5 boxes	3 00	
	3 door keys for room of Committee on Public Buildings	3 00	
	1 key for Naval Affairs Committee room	50	
	For putting up 5 thermometers	1 00	
	2 keys for post office	1 25	
	3 keys for enrolling room	1 50	
	4 desk keys for hall	2 00	
	3 desk keys for room of Committee on Accounts	1 50	
	7 desk keys for room of Committee on the Territories	3 50	
	2 casters on chairs	50	
	2 keys for Roads and Canals Committee room	1 00	
	1 bolt for ditto	50	
	2 casters for Ways and Means Committee room	50	
	8 keys for Indian Affairs Committee room	4 00	
	Repairing hall desk	25	
	1 set casters on hall chair	50	
	1 door key in room of Committee on Commerce	1 00	
	Hanging door in connexion	25	
	New cord to same	50	
	1 caster in Indian Affairs Committee room	25	
	1 set casters in Revolutionary Pensions Committee room	1 00	
	Repairing clerk's desk	4 00	

Repairing lock.....	50
1 key for vault of cellar.....	1 00
3 door and 4 drawer keys in Ways and Means Committee room.....	5 00
1 door key for Expenditures of the Post Office Committee room.....	1 00
2 desk keys in hall.....	1 00
Cleaning and laying 1 carpet in old Capitol.....	5 00
Covering 1 chair with leather.....	3 50
Repairing chairs in Military Affairs Committee room.....	1 00
Covering 4 doors in lower story.....	6 00
1 shade for stationery room.....	4 00
Covering 1 table with oil-cloth.....	3 00
1 pair of shades for room of Committee of Claims.....	5 00
Making and putting down 103 yards carpet for engineer's room, at 25 cents.....	25 75
Varnishing furniture in engine room.....	5 50
Sundry repairs on sofas in lobby.....	2 50
Repairing carpet in hall.....	3 00
Laying carpet in bay windows.....	1 00
204 yards gimp, at 12 cents.....	24 48
7 yards green enamelled cloth, at 75 cents.....	5 25
6 skins red leather, at \$2 50.....	15 00
186 yards gimp, at 12 cents.....	22 32
15 yards green baize.....	10 00
103 yards carpet.....	154 50
Thread.....	1 00
4 yards linen.....	2 00
3 yards wide linen.....	1 50
Fixtures for 2 windows.....	2 00
1 door key for Indian Affairs Committee room.....	1 00
1 door key for room of Committee on Patents.....	1 00
9 desk keys in hall.....	4 50
1 lock for hall.....	1 75
Lining under clerk's desk with carpet.....	1 00
3 keys for room 24.....	1 50
1 key for Committee of Claims room.....	50
Cleaning and varnishing 2 desks.....	5 00
Cloth on same.....	50
Large plate glass.....	1 00
Repairing lock in steam room.....	1 00
1 door key for Public Buildings and Grounds Committee room.....	1 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued	1 light glass in library	\$0 50	
	Repairing stable	5 00	
	6 lights glass in cloak room	3 00	
	1 bound with pink	15 00	
	½ dozen trimmed handles	3 00	
	21 lights, enamelled glass	21 00	\$837 50
J. B. Smith	254 reams manilla paper, 19 by 24, at \$2 40	609 60	
	184 reams manilla paper, 24 by 27, at \$2 85	524 40	
	540 M speech envelopes, at \$3	1,620 00	
	670 pounds binders' boards cut to order	40 20	
Taylor & Maury	617,500 envelopes, at \$3	---	2,794 20
Do	78,000 envelopes, at \$3 50	273 00	1,852 50
	84,000 envelopes, at \$3 50	294 00	
	10,000 envelopes, large letter, at \$4 25	42 50	
	10,000 envelopes, thick, at \$3 50	56 00	
	123,000 envelopes, thick, at \$3 50	430 50	
	50,000 envelopes, thick, at \$3 50	175 00	
	75,000 envelopes, thick, at \$3 50	202 50	
	20,000 envelopes, large letter, at \$4 25	85 00	
A. B. Reed	Folding documents, pay-roll for January, 1861	100 00	1,618 50
Samuel Phillips	do	100 00	
H. H. Clark	do	100 00	
J. R. Zimmerman	do	77 50	
J. J. Harrison	do	77 50	
A H Alcott	do	77 50	
Z Brown	do	62 00	
W. J. Harris	do	62 00	
George T Whittington	Folding documents, pay roll for January, 1861	93 00	656 50

J. S. Kellogg.....	do.....	do.....	93 00
Samuel Parish.....	do.....	do.....	93 00
N. C. Stone.....	do.....	do.....	77 50
H. G. Divine.....	do.....	do.....	77 50
Nicholas Du Bois.....	do.....	do.....	77 50
J. T. Chancey.....	do.....	do.....	46 50
Folding documents, pay roll for January, 1861.....			558 00
Mathias Hagerty.....	do.....	do.....	6 45
W. T. Barnes.....	do.....	do.....	15 48
C. Franklin.....	do.....	do.....	13 40
J. Simonds.....	do.....	do.....	16 31
James Taylor.....	do.....	do.....	16 72
J. T. Bryan.....	do.....	do.....	14 69
J. N. Campbell.....	do.....	do.....	16 09
Hannibal H. Steel.....	do.....	do.....	13 61
A. Swigert.....	do.....	do.....	14 51
J. P. Clarke.....	do.....	do.....	17 60
W. F. Harrison.....	do.....	do.....	15 10
J. Hough.....	do.....	do.....	20 61
S. Lenan.....	do.....	do.....	19 14
Frank Smith.....	do.....	do.....	13 76
W. J. Cook.....	do.....	do.....	18 73
J. Knight.....	do.....	do.....	15 00
Thomas Wilson.....	do.....	do.....	14 50
F. C. Harris.....	do.....	do.....	38
John Carpenter.....	do.....	do.....	12 45
H. McClure.....	do.....	do.....	18 87
W. Benault.....	do.....	do.....	6 97
H. Slye.....	do.....	do.....	14 34
Ed. Crossley.....	do.....	do.....	5 85
A. Shaw.....	do.....	do.....	19 52
H. Hurst.....	do.....	do.....	12 45
H. E. Weaver.....	do.....	do.....	19 47
T. Warner.....	do.....	do.....	14 81
N. Brown.....	do.....	do.....	15 18
C. P. Reece.....	do.....	do.....	12 00
S. W. Bassett.....	do.....	do.....	14 96
E. Baum.....	do.....	do.....	13 72
W. H. McKenney.....	do.....	do.....	7 97

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
James Mackey	Folding documents, pay-roll for January, 1861.....	\$5 32	
And. Baine	do.....do.....	2 25	
J. Visser	do.....do.....	6 00	
George Mockabee.....	do.....do.....	2 92	
C. Bryan	do.....do.....	1 57	
Eugene Groove.....	do.....do.....	1 67	\$464 37
Lawrence Bess.....	Services in the office of the House of Representatives folding room, October, November, and December, 1860, 3 months.....	-----	300 00
Felix McCloskey	Services in the office of the House of Representatives, and for folding documents, for month of November, 1860.....	-----	100 00
Felix McCloskey.....	Services in the office of the House of Representatives, and for folding documents, for month of December, 1860.....	-----	100 00
Elley Reynolds.....	75 buckets paste for folding room, for December, 1860.....	-----	75 00
Ellev Reynolds.....	67 buckets paste for folding room, for January, 1861.....	-----	67 00
W. C. Dodge.....	Services in folding room, from March 12 to April 1, 1860, 20 days.....	-----	60 00
W. J. Harris.....	26 buckets paste in November, 1860	-----	26 00
J. M. Lucas.....	2,670 copies Congressional Directory, at 36½ cents each.....	-----	974 55
Francis H. Smith.....	Services as stenographer to the select committee, appointed December 24, 1860, to investigate charges of fraud in Interior Department, for matters included and not included in the report to the House—equal to 130 columns of the Globe, at a rate of compensation not exceeding \$4 per column—by resolution of December 27, 1860	-----	580 00
W. B. Lord	Services as reporter for select committee of five, appointed January 9, 1861, relative to the alleged conspiracy to attack the Capitol, &c., 69 columns Daily Globe, at \$4 50 per column.....	-----	310 50
Wm. H. & H. Morrison	10 copies Brightley's Digest, for House library, at \$6.....	60 00	
	1 Blue Book	3 50	
W J Ketchum	Winding clocks, from January 1 to February 28, 1861, at \$20 per month.....	40 00	
	New spring and cleaning clock in Speaker's room	10 00	50 00

George Bruce	Services as laborer in the office of the House of Representatives, for February, 1860.	26 00
Archibald Wilson	Lettering monuments in Congressional Burying Ground	10 00
J. D. Sanborn	Witness before select committee, appointed February 14, 1861, to investigate certain matters connected with the library	2 00
C. W. C. Dunnington	Capitol police, pay-roll for February, 1861	72 00
A. K. Arnold	do	45 83
S. J. Johnson	do	45 83
J. T. Ball	do	45 83
Thomas C. Wells	do	45 83
W. H. Thompson	do	45 83
Richard D. Slater	do	45 83
Fred. Fritz	do	45 83
Francis Reilley	do	45 83
Jno. P. Hamlin	do	45 83
J. S. Magee	do	45 83
Michael French	do	45 83
J. N. Crockwell	do	45 83
Thos. Proby	do	45 83
Jere'h Boyd	do	33 33
		701 62
M. McConnell	Capitol police, (extra force,) pay-roll for February, 1861	42 78
Jacob Fleishell	do	42 78
S. C. Wailes	do	42 78
Moses Foster	do	42 78
Joseph Reese	do	42 78
Isidore Morrice	do	42 78
F. A. Klopfer	do	42 78
Robert Fry	do	42 78
Thos. Lambert	do	42 78
B. F. Beveridge	do	42 78
J. L. Wright	do	42 78
M. N. Bassett	do	42 78
G. R. Wilson	do	42 78
F. Donnelly	do	42 78
		598 92
Morrice McConnell	Capitol police, (extra force,) pay-roll for January, 1861	15 27
Jacob Fleishell	do	15 27
S. C. Wailes	do	15 27
Moses Foster	do	15 27

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Joseph Reese.....	Capitol police, (extra force,) pay-roll for January, 1861	\$15 27	
Isidore Morrice.....	do.....do.....	15 27	
F. A. Klopfer.....	do.....do.....	15 27	
Robert Fry.....	do.....do.....	15 27	
Thos. Lambert.....	do.....do.....	15 27	
B. F. Beveridge.....	do.....do.....	15 27	
J. L. Wright.....	do.....do.....	15 27	
M. N. Bassett.....	do.....do.....	15 27	
G. R. Wilson.....	do.....do.....	15 42	
Francis Donnelly.....	do.....do.....	15 42	\$203 09
Geo. W. Chapman.....	Temporary clerk, pay-roll for February, 1861	150 00	
J. R. Briggs, jr.....	do.....do.....	150 00	
Wm. Averill.....	do.....do.....	150 00	450 00
B. F. Hutchins.....	Services as clerk to Committee on Indian Affairs, from February 1 to March 4, 1861, 32 days, at \$4 per day		128 00
Albert Rust.....	Newspapers		53 00
Wm. Smith.....	do.....do.....		38 00
Van Esic, Horton & Co.....	"New York Evening Day Book" for the following named members of the 36th Congress:		
	Hon. Geo. W. Hughes	3 25	
	W. G. Whiteley.....	3 25	
	W. Barksdale.....	3 00	
	J. A. Stewart.....	3 00	
	John J. McRea.....	3 25	
	J. S. Phelps.....	3 25	
	Reuben Davis.....	6 00	
	B. Craig.....	6 00	31 00
John S. Phelps.....	Newspapers.....		24 25
Van Esic, Horton & Co.....	"New York Day Book" for:		

Samuel Lee	Hon. J. H. Thomas	-----	6 00
A. G. Myers	S. O. Peyton	-----	2 00
Wm. Fudge	Mail boy, pay-roll for February, 1861 ..	75 00	
H. Schreiner	do	75 00	
J. D. Wright	Temporary mail boy	50 00	150 00
Samuel Forbert	do	50 00	
	Services as page to Sergeant-at-arms, from Feb. 1 to March 4, 1861, 32 days, at \$2 ..	-----	100 00
	5 horses and carryalls, from August 1 to November 30, 1860, 122 days, at \$2 per	-----	64 00
	day each	1, 220 00	
	1 saddle horse for same time, at \$1 50 per day	183 00	
Samuel Forbert	Cartage: 253 loads in August, 282 in September, 249 in October, and 27 in Novem-	-----	1, 403 00
Samuel Forbert	ber—making a total of 811 loads, at 50 cents per load	-----	405 50
	Cartage: 131 loads of documents in June, 1860	65 50	
	Cartage: 131 loads of documents in July, 1860	67 00	
Taylor & Maury	12 cards extra double-pointed pens	5 50	132 50
	6 pieces red rubber, \$1 20; 613 lots pads, 90 cents	2 10	
	8 packets double thick note paper	10 00	
	2 boxes double thick envelopes	5 00	
	24 dozen packs visiting cards	96 00	
	2 dozen scissors	14 00	
	6 boxes indelible ink	1 50	
	300 dozen red tape	75 00	
	50 pounds extra red wax	75 00	
	15 reams cap, ruled	67 50	
	15 reams cap, unruled	67 50	
	2 ³ / ₄ dozen bottles writing fluid	16 00	
	5 gross lead pencils, No. 2	30 00	
	5 gross lead pencils, No. 3	30 00	
	2 dozen scrap-books	36 00	
	1 dozen scrap-books, half Turkey	27 00	
	1 dozen scrap-books, small	10 80	
	1 dozen glass paper weights	15 00	
	10 alabaster paper weights	7 50	
	3 large size paper weights	7 50	
	1 dozen large paper weights	18 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Taylor & Maury—Continued.....	4 china hand paper weights.....	\$5 00	
	4 black marble gilt paper weights.....	8 00	
	1 deer paper weight.....	2 50	
	3 paper weights.....	4 50	
	1 large eagle paper weight.....	3 50	
	2 dozen bronze paper weights.....	4 00	
	500 quills.....	12 50	
	1,000 card envelopes.....	3 75	
	3 dozen glass and plated inkstands.....	18 00	
	3 dozen glass and plated sand stands.....	18 00	
	9 glass inkstands, square.....	27 00	
	8 glass sand stands, square.....	24 00	
	10 reams note paper.....	25 00	
	2 reams extra thick note paper.....	9 00	
	6 French pump standishes, flat.....	7 50	
	7 Draper's inkstands.....	8 75	
	10 large French pump inkstands.....	12 50	
	3 dozen gutta-percha pencils and leads.....	18 00	
	6 gross steel pens.....	6 00	
	3 boxes pencil erasers.....	4 50	
	3 dozen pen-holders.....	50	
	1 box 3-pointed pens.....	2 00	
	250 pen-wipers.....	77 50	
	6 bottles Spalding's glue.....	1 50	
	12 inkstands.....	6 00	
	3 gross pen-holders.....	9 00	
	10 reams large note paper, gilt.....	27 50	
	8,000 white envelopes.....	28 00	
	6 gross lead pencils.....	36 00	
	4 dozen desk folios, medium.....	4 50	
	4 dozen desk folios, demy.....	3 00	
	1 dozen inkstands.....	2 50	

3 inkstands.....	1 50
12 inkstands.....	6 00
5 large glass inkstands.....	12 50
12 bronze glass inkstands.....	39 00
3 dozen band tape boxes.....	18 00
2 dozen band tape boxes.....	9 00
1½ dozen tape stands.....	13 50
12 boxes swan quill pens.....	9 00
2 reams record cap.....	9 00
1½ dozen scissors.....	11 25
1 dozen shears.....	12 00
1 blank book.....	1 25
½ dozen large French inkstands.....	10 50
½ dozen Draper's inkstands.....	7 50
½ dozen fancy French inkstands.....	9 00
2 dozen boxes Rhoad's pens.....	24 00
12 dozen cards blotting paper.....	9 00
1,000 quills.....	25 00
½ dozen autograph books.....	7 50
½ do.....do.....do.....	6 60
½ do.....do.....do.....	6 00
1½ dozen small shears.....	6 87
1½ dozen shears.....	11 00
1½ dozen large penknives.....	27 50
1 diary, 1861.....	1 25
Autograph book.....	75
1 dozen blank books.....	1 25
2 dozen memorandum books.....	3 50
2 dozen small memorandum books.....	75
3 dozen blank books.....	16 50
1 writing case.....	5 75
1.....do.....do.....	6 50
3.....do.....do.....	21 00
1 Russia writing case.....	15 00
2 dozen reference files.....	3 60
25 pounds extra red wax.....	37 50
1 dozen oil writing pads.....	6 00
2,000 quills.....	50 00
1 large portfolio.....	4 25

Alexander & Cooke	Binding documents, viz:	19,306 volumes Mechanical Patent Office Report, 1859, part 1, at 12 cents.....	2,316 72	4,416 72
		17,500 vols. Mechanical Reports, 1859, part 2d	2,100 00	
Sarony, Major & Knapp.....	Lithographing and printing in colors 11,550 copies each of 20 lithographic views for Stevens's Report Pacific Railroad Surveys, 231,000 plates, at \$2 60.....			6,006 00
Sarony, Major & Knapp.....	Engraving and printing 11,550 copies of the map of "Milk River Crossing to the crossing of the Columbia river," for Stevens's Report Pacific Railroad Surveys, at \$16 per 100.....			1,848 00
Sarony, Major & Knapp.....	Engraving and printing in colors 11,550 copies of the "Isothermal Chart," for Stevens's Report Pacific Railroad Survey, at \$5 per 100.....			577 50
Sarony, Major & Knapp.....	Engraving and printing 11,550 copies of "Map of Profiles" for Stevens's Report Pacific Railroad Surveys, at \$3 per 100			346 50
Sarony, Major & Knapp.....	Engraving and printing 11,550 copies each of two quarto plates of "Insects," for Stevens's Report Pacific Railroad Survey, at 60 cents per 100.....			138 60
Julius Bien	Lithographing and printing maps for the Coast Survey Report for 1859, as follows: Map No. 10, printing 6,550 copies, at \$2 75 per 100.....		180 12½	
	Do.... 12.....do.....do.....		180 12½	
	Do.... 18.....do.....at \$1 50.....		98 25	
	Do.... 23.....do.....at 90 cents.....		58 95	
	Do.... 28.....do.....at 75 cents.....		49 12½	
	Do.... 29.....do.....at \$1 75.....		114 62½	
James B. Smith & Co	Binding the following documents, 1st session 36th Congress, in half Russia, viz: 295 copies Pacific Railroad, vol. 12, part 1, at \$1, House of Representatives		295 00	681 20
	Binding and lettering the following books, half morocco, viz: 1 vol. Frémont's Reports.....		75	
	1 vol Speeches		75	
	2 vols. Kentucky Contested Elections		1 50	
	3 vols. President's Message and Documents		2 25	
	2 vols. newspapers.....		6 00	
	Lettering Congressional Manuel		25	
J. F. Brandly	Clerk to Committee of Elections for 32 days, from February 1 to March 4, 1861			306 50
J. F. Mendenhall.....	Clerk to Committee on the Post Office and Post Roads, from February 1 to March 4, 1861, 32 days, at \$4.....			128 00
Charles H. Upton	Clerk to Committee on Naval Affairs, from February 1 to March 4, 1861, 32 days.....			128 00
Melancthon Smith.....	Clerk to Committee on Commerce, from February 1 to March 4, 1861			128 00
B. G. Daniels.....	Clerk to Committee on Accounts, from February 1 to March 4, 1861.....			128 00

John Carpenter	do	10 20
H. McElwee	do	14 68
Wheaton Berault	do	11 13
H. J. Slye	do	7 05
E. Crosby	do	7 63
A. Shaw	do	20 67
H. Hurst	do	6 48
T. Warner	do	15 05
Nicholas Brown	do	19 36
Charles Reese	do	12 43
S. W. Bassett	do	14 28
E. Baum	do	16 19
John Mackey	do	12 36
Andrew Bain	do	22 38
Julius Visser	do	12 56
G. W. Mockabee	do	14 25
C. Bryan	do	14 17
Eugene Grove	do	16 35
S. Lenan	do	22 04
George Bowen	do	18 23
John Middleton	do	12 88
George Harris	do	19 98
D. W. Bates	do	7 39
H. A. Middleton (not paid)	do	1 50
William Douglass	do	12 28
J. N. Campbell	do	14 36
C. Shaw	do	10 50
A. Swigert	do	13 05
W. O. Fowler	do	6 97
W. T. Barnes	do	11 18
J. H. Hough	do	23 91
C. Franklin	do	12 82
Thomas Wilson	do	20 00
J. P. Chase	do	11 96
Frank Smith	do	12 03
W. J. Cook	do	13 80
J. Knight	do	12 25
H. Weaver	do	31 35

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Thomas Haggerty	Folding documents.....	\$5 02	
William F. Harrison.....	do.....	14 94	
	Less.....	608 24	
		1 50	\$606 74
L. D. Johnson	Folding documents.....	96 00	
N. M. McLewell.....	do.....	96 00	
Augustus Potts.....	do.....	64 00	
William F. Norris.....	do.....	64 00	
A. J. Dean	56 buckets of paste, from 1st to 23d November, 1860.....		320 00
J. Entwisle.....	Engineer, pay-roll for February, 1861.....	125 00	56 00
M. R. Shankland.....	do.....	100 00	
D. A. McElhone.....	do.....	100 00	
Jos. Mansfield.....	do.....	56 00	
Thomas Hunt.....	do.....	56 00	
S. Adams.....	do.....	56 00	
William Sanderson	do.....	56 00	
William Mooney	do.....	56 00	
John B. Dade.....	Messenger in gentlemen's gallery, from February 1 to March, 1861, (resolution of January 14, 1861,) at \$1,200 per annum.....		605 00
W. Blair Lord	Reporter to select committee of three (resolution of February 14, 1861) to investigate certain matters in connexion with the House library, 21 columns Daily Globe, at \$4 50 per column.....		106 67
Edmund F. Brown	Services as "chorister" during the 2d session 36th Congress.....		94 50
Thomas S. Boccock.....	Newspaper account.....		65 00
James Ashley.....	Stationery.....		35 00
S. Coburn	do.....		24 22
Augustus Frank.....	do.....		23 62
John Cochran.....	do.....		23 58
	do.....		22 29

J. R. Riggs.....	do.....	21 63
C. B. Howard.....	do.....	19 75
Eli Thayer.....	do.....	18 88
R. Conkling.....	do.....	18 58
G. Marston.....	do.....	17 16
W. Smith.....	do.....	16 66
J. A. Stallworth.....	do.....	14 14
C. C. Washburn.....	do.....	13 78
F. E. Spinner.....	do.....	7 50
A. R. Parker.....	Laud maps, pay-roll for February, 1861.....	180 00
George Chipman.....	do.....	150 00
Rufus Prentice.....	do.....	150 00
James Peacock.....	do.....	150 00
Ben Perley Poore.....	Clerk to the Committee on Foreign Affairs, from February 1 to March 4, 1861.....	630 00
R. W. Latham.....	Attendance on select committee to investigate the alleged abstraction of bonds from the Interior Department, eleven days.....	128 00
	Travel to and from Washington.....	22 00
		48 00
H. Maynard.....	Stationery, 1st and 2d sessions 36th Congress.....	70 00
H. F. Clark.....	Stationery.....	32 11
H. E. Royce.....	do.....	25 00
D. W. Gooch.....	do.....	25 00
S. Clemens.....	do.....	22 79
G. W. Hughes.....	do.....	21 83
J. J. Perry.....	do.....	21 69
M. F. Conway.....	do.....	21 03
A. Burlingame.....	do.....	20 82
Thomas Ruffin.....	do.....	20 77
T. M. Edwards.....	do.....	20 34
B. F. Junkin.....	do.....	20 19
E. Babbitt.....	do.....	19 98
J. E. Bouigny.....	do.....	19 33
G. W. Palmer.....	do.....	18 60
M. A. Otero.....	do.....	15 14
J. A. Gilmer.....	do.....	18 30
S. G. Daily.....	do.....	15 11
S. S. Blair.....	do.....	14 05
J. Woodruff.....	do.....	12 07
		8 98

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. A. Stewart.....	Stationery .....	.....	\$7 29
J. Y. Brown	do .....	.....	3 01
Dobbin & Fuller	Engraving.—For advertising proposals for lithographing .....	.....	2 59
Hugh Young	Clerk to Committee on the Territories, from February 1 to March 4, 1861, 32 days .....	.....	128 00
S. Clemens	Newspapers .....	.....	43 00
J. T. Mitchell	1,891 pounds superior twine, at 62½ cents per pound .....	.....	1,181 87
Stillman Mores	Services in the folding room of the House of Representatives, from December 3, 1860, to January 31, 1861 .....	.....	180 00
W. T. Evans	Services in the House library, and for folding documents, during the months of August and December, 1860, and January, 1861 .....	.....	139 50
W. T. Evans	Ditto, from February 1 to March 4, 1861 .....	.....	48 00
Marcellus Bailey	Services in the House Library, and for folding documents, during the months of November and December, 1860, and January, 1861 .....	.....	138 00
Marcellus Bailey	Ditto, from February 1 to March 4, 1861 .....	.....	48 00
S. A. Power	Messenger in Clerk's office, and for folding documents, during February, 1861 .....	.....	100 00
G. W. Beale	Services in stationery and folding rooms, House of Representatives, for February, 1861 .....	.....	100 00
Ed. Burke	Services in book room, House of Representatives, and folding documents, from January 1 to March 4, 1861, 63 days, at \$1 50 per day .....	.....	94 50
A. J. Dean	81 buckets paste for folding room, for the month of October, 1860 .....	.....	81 00
J. M. Kunkel	Stationery .....	.....	18 42
Emerson Etheridge	do .....	.....	16 85
Thomas Corwin	do .....	.....	16 77
Charles Case	do .....	.....	12 26
J. A. McClernand	do .....	.....	5 60
J. S. Millson	Stationery, 1st session 36th Congress .....	.....	35 99
J. A. McClernand	do .....	.....	33 94
James Humphreys	Stationery, 2d session 36th Congress .....	.....	15 04
John Covode	Stationery .....	.....	14 55
George Briggs	do .....	.....	13 97
William N. H. Smith	do .....	.....	13 13
J. W. Stevenson	do .....	.....	12 56
J. L. N. Stratton	do .....	.....	12 36

J. S. Millson	do	8 50
D. E. Sickles	do	8 45
W. E. Niblack	do	6 50
John S. Phelps	do	6 16
William Pennington	do	3 69
M. R. H. Garnett	do	2 64
J. M. Lucas	do	2 50
Samuel R. Curtis	do	1 02
James Sheehy	Services as reporting clerk in the office of the House of Representatives for the month of November, 1860	150 00
John R. Campbell	Services as reporting clerk in the House of Representatives for the month of November, 1860	150 00
D. M. Stewart	Temporary clerks, pay-roll, for term as stated below :	
W. S. King	From January 30 to March 4, 1861	\$170 00
W. E. Harkin	From February 2 to March 4, 1861	155 00
E. A. Marshall	do	155 00
Louis Schade	From February 8 to March 4, 1861	125 00
John Mauley	From February 20 to March 4, 1861	65 00
J. Cobean	do	65 00
J. H. Puleston	do	55 00
W. H. Mennix	From February 21 to March 4, 1861	60 00
H. Kreshman	From February 23 to March 4, 1861	50 00
W. Pennington	From February 3 to March 4, 1861	150 00
Cook, Hunt & Co	Newspaper account	1,050 00
	"Ohio State Journal" for—	50 00
	Hon. Edward Wade	6 00
	C. A. Trimble	3 00
	William Allen	1 50
	Benjamin Stanton	6 00
	"Ohio State Journal" for—	
	Hon. H. G. Blake	1 50
	C. A. Trimble	1 50
	Newspaper account	
	"Baltimore Patriot" for Hon. D. Kilgore	3 00
	Services as reporter for "select committee of five," under a resolution of January 9, 1861, reporting resolutions concerning conspiracy, &c., 79 columns, at \$4 50	12 00
James Wilson		2 00
J. F. & J. M. McIlton		
William Blair Lord		355 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
J. M. Lucas.....	12 dozen copies of Congressional Directory, at 27½	-----	\$352 27
J. M. Barclay	Additional compensation as journal clerk, allowed from the contingent fund by resolution of the House of March 3, 1857, and act of May 4, 1858, at \$340 per annum, from March 1, 1860, to March 1, 1861	-----	
John W. Forney.....	Fees for sealing official papers during the 36th Congress, and prior to January 1, 1861, 1,025 papers, at 25 cents each	-----	339 65
J. Schrumann.....	Services as laborer, 90 days, under J. L. Wright, late doorkeeper, from November 9, 1859, to February 6, 1860, at \$1 50	-----	256 25
James C. Walker.....	Additional compensation as reading clerk, under resolution of the House of March 3, 1857, and act of May 4, 1858, from December 1, 1860, to February 28, 1861, 3 months, at \$30 per month	-----	135 00
William Jones.....	Excess postage on letters and packages addressed to members of the House of Representatives, from January 1 to March 4, 1861	-----	90 00
Luther R. Smoot	Witness before select committee to investigate frauds in Interior Department, at \$2 per day, and travel, 20 cents	-----	52 22
Lutz & Beall	1 new harness, and for repairs on harness, from October 20, 1856, to December 3, 1859	-----	14 20
Do	Repairs on harness, sundry times, from December 4 to September, 1860	-----	93 00
Andrew J. Joyce	Repairs on carriage, from April 4, 1859, to October 31, 1860	-----	14 75
Do.....	Repairing carriage, from November 30, 1860, to February 19, 1861	-----	127 60
Samuel G. Dailey.....	Expenses incurred in the contested election case of Samuel G. Dailey vs. Experience Estabrook, delegate from the Territory of Nebraska in the 36th Congress of the United States, provided for by a resolution of the House of Representatives of February 19, 1861	-----	16 12
William C. Anderson	Expenses incurred in the contested election case of James S. Chrisman vs. W. C. Anderson, of the 4th congressional district, State of Kentucky, in the 36th Congress of the United States, as provided for by a resolution of the House of Representatives of February 19, 1861	-----	2,350 00
Daniel E. Sickles.....	Expenses incurred in the contested election case of A. J. Williamson vs. Daniel E. Sickles, of the 3d congressional district of the State of New York, in the 36th Congress of the United States, as provided for by a resolution of the House of Representatives February 19, 1861	-----	2,030 69
		-----	1,929 30

A. J. Williamson	Expenses incurred in the contested election case of A. J. Williamson <i>vs.</i> Daniel E. Sickles, of the 3d congressional district of the State of New York, in the 36th Congress of the United States, as provided for by a resolution of the House of Representatives February 19, 1861.....	1,800 65
Do	Compensation and mileage as contestant of seat of D. E. Sickles, provided for by resolution of the House of March 1, 1861.....	1,000 00
William G. Harrison.....	Expenses incurred in the contested election case of William G. Harrison <i>vs.</i> H. Winter Davis, of the 4th congressional district of Maryland, in the 36th Congress of the United States, as provided for by a resolution of the House of Representatives of February 19, 1861.....	1,009 10
J. R. Barrett.....	Expenses incurred in the contested election case of Francis P. Blair <i>vs.</i> J. R. Barrett, of the 1st congressional district of Missouri, in the 36th Congress of the United States, provided for by a resolution of the House of Representatives of February 19, 1861.....	886 25
Scuyler Colfax.....	Stationery.....	14 05
Ed. Darling	Pay-roll, laborers, for February and part of March, 1861:	
J. De Saules	From February 1 to March 4.....	\$48 00
Thomas Martin	do.....	48 00
Lewis Saunders.....	do.....	48 00
David Fisher.....	do.....	48 00
John Johnson	do.....	48 00
Frank Tavens.....	do.....	48 00
John Massay	do.....	48 00
Ed. M. Thomas.....	do.....	48 00
John Costen.....	do.....	48 00
Levi Neal.....	For February, 1860.....	56 00
William H. Smith	do.....	42 00
Mr. Twine	do.....	42 00
Rinaldo Griffin	do.....	26 00
J. B. Smith.....	320 reams manilla paper, 19 X 24.....	768 00
	240 reams manilla paper, 24 X 27.....	684 00
W. T. Dove.....	1 connecting ball, 25 cents; gas fitter and assistant, 2 days, \$8.....	8 25
	1 gas bracket, \$1 50; gas-fitter and assistant, 1 day, \$4.....	5 50
	Plumber and assistant, $\frac{1}{2}$ day, \$2; gas fitter and assistant, 2 days, \$8.....	8 00
	4 $\frac{1}{2}$ pounds leather, at 40 cents.....	1 80
	16 $\frac{1}{2}$ feet gas pipe, at 20 cents, \$3 30; gas fitter and assistant, 2 days, \$8.....	11 30
		640 00
		1,452 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. T. Dove—Continued	5 fittings, \$1 25; 1 doz. screws, 6 cents; 1 1-light pendant, \$1 25.....	\$2 56	
	Gas fitter and assistant, 2 days.....	8 00	
	Gas fitter and assistant, 1 day, \$4; globe holder, 25 cents; 12 globes, \$15.....	19 25	
	Gas fitter and assistant, 2 days.....	8 00	
	41 pounds pure gum packing, at \$1 25.....	51 25	
	5 feet gas pipe, \$1; gas-fitter and assistant, 1 day, \$4.....	5 00	
	Gas fitter and assistant, 1½ day.....	6 00	
	Plumber and assistant, 1½ day, \$6; leather, 25 cents.....	6 25	
	Gas fitter and assistant, 6 days, \$24; 1 harp light, \$7.....	31 00	
	Gas fitter and assistant, 2 days, \$8; plumber and assistant, ½ day, \$1.....	9 00	
	Repairing shower, 56 cents; plumber and assistant, 1 day, \$4.....	4 56	
	Gas fitter and assistant, 2 days.....	8 00	
	Plumber and assistant, 1 day, \$4; gas fitter and assistant, 2 days, \$8.....	12 00	
	Gas fitter and assistant, 1½ day.....	6 00	
	3½ feet gas pipe, 65 cents; 6 feet steel wire, 10 cents.....	75	
	Gas fitter and assistant, 4 days.....	16 00	
	1 brass-bound rule.....	1 50	
	Gas fitter and assistant, 2 days.....	8 00	\$239 97
Job W. Angus.....	1 set casters, \$1; 2 desk keys, \$1; 1 lock, \$1.....	3 00	
	Hanging thermometer.....	25	
	Making shutters to sable wire doors.....	2 00	
	Repairing chair, \$1; 1 key for reporter, 50 cents.....	1 50	
	Repairing table in folding room, \$1 50; 1 door key, \$1.....	2 50	
	2 desk keys, \$1; 1 light stand for Committee of Elections, 75 cents.....	1 75	
	Repairing lock in folding room.....	75	
	1 door key for room of Committee on the District of Columbia.....	1 00	
	2 door keys for room of Committee on Agriculture.....	2 00	
	7 spring hinges.....	42 00	
	3 drawer keys, \$1 50; 1 door key for post office, \$1.....	2 50	
	2 drawer keys, \$1; coat rack in retiring room, \$1; setting 1 light glass, 50 cts.....	2 50	
	1 door key for room of Committee on Foreign Affairs.....	1 00	

1 set casters, \$1; repairing 1 chair, 75 cents.....	1	75
Bolts to drawer in folding room.....	1	75
1 mop handle and head, \$1; 1 lock in back room, \$1 50.....	2	50
Casters on hall chairs, 50 cts.; repairing chairs and 1 set casters, \$1 50.....	2	00
Repairing lock and key.....	2	00
1 door key.....	1	00
1 drawer key.....	1	50
1 set castors, hall chairs.....	1	00
Repairing lock, door No. 24.....	1	00
1 key for door No. 24.....	1	00
2 keys for Agricultural room.....	2	00
1 drawer key.....	1	50
Hanging thermometer.....	25	
2 door keys.....	1	50
1 lock for Commerce Committee.....	1	50
1 lock for upper window.....	2	00
1 knob to door of folding room.....	50	
2 keys for hall desks.....	1	00
1 set castors on chairs.....	1	00
10 pair spring hinges.....	120	00
Repairing hall chairs.....	2	00
27 packing boxes.....	67	50
12 packing boxes.....	30	00
2 packing boxes.....	5	00
12 yards carpet for bath room.....	24	00
25 packing boxes.....	62	50
94 packing boxes.....	235	00
1 set castors.....	1	00
Repairing chairs.....	50	
1 set castors, hall chairs.....	2	00
Fastenings to gallery doors.....	50	
Lock to ice box.....	1	00
Lock to folding room.....	75	
1 drawer key.....	50	
1 door key, engine room.....	1	00
1 set casters.....	1	00
Repairing sofa.....	50	
Lock, house desk.....	50	
Case for Clerk's desk.....	10	00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued.....	2 lights glass, boiler room.....	\$1 00	
	2 lights glass in hall doors.....	2 00	
	1 knob for water-closet.....	75	
	Repairing lock.....	50	
	1 key for boiler room door.....	75	
	Repairing hall chairs.....	1 00	
	Repairing sofa, Sergeant-at-Arms.....	50	
	1 set casters to sofa, Sergeant-at-Arms.....	50	
	1 set casters on chair in library.....	25	
	Repairing lock and 1 key for hall desk.....	1 00	
	Lock for water box.....	75	
	Strapping 4 boxes.....	2 00	
	Zinc for engine room.....	1 00	
	1 door key.....	1 00	
	1 door bolt.....	75	
	Repairing lock.....	50	
	Setting glass in document room.....	1 00	
	1 set castors, document room.....	1 00	
	1 door key for Public Expenditures Committee.....	1 00	
	2 keys for folding room.....	1 50	
	1 pair brass hinges, folding room.....	1 00	
	2 keys, door watercloset.....	1 50	
	New cord and hanging curtains.....	50	
	Repairing box for post office.....	1 00	
	Repairing hat rack in Clerk's office.....	75	
	2 keys for Patent room.....	2 00	
	1 key and hook.....	75	
	2 hooks and keys.....	1 00	
	2 drawer keys.....	1 00	
	Lock for folding room.....	2 00	
	Padlock and hasp for stable.....	1 50	
	Repairing chairs.....	1 00	

J. W. Jones.....	Putting down carpet and brass.....	3 00	
J. W. Clay.....	1 gallon turpentine, folding room.....	1 00	
	Repairing gallery doors.....	75	
	1 desk key, hall.....	50	
	1 set castors, hall chairs.....	1 00	
	Repairing sofa.....	1 00	
	Repairing hall chairs.....	2 00	
	24 boxes.....	30 00	
	12 yards carpet in bath room.....	24 00	
	1 large plate glass.....	20 00	
	1 large French glass.....	24 00	
	24 packing boxes.....	30 00	
	Setting glass in ceiling of hall.....	18 00	
	120 boxes, small size.....	240 00	
	100 packing boxes.....	250 00	
			\$1,329 75
			56 00
J. W. Jones.....	Use of horse and wagon, for February, 1861.....		
J. W. Clay.....	Huntsville (Ala.) Democrat, for—		
	Hon. J. V. Wright.....	2 00	
	M. R. H. Garnett.....	2 00	
	Miles Taylor.....	2 00	
			6 00
John Sherman.....	Stationery.....		22 86
J. N. Morris.....	do.....		20 49
D. Clopton.....	do.....		10 40
P. B. Fouke.....	do.....		2 97
Francis P. Blair, jr.....	Expenses incurred in the contested election case of Francis P. Blair vs. J. N. Barrett, of the first congressional district of State of Missouri, in the 36th Congress of the United States, provided for by a resolution of the House of Representatives of February 19, 1861.....		
	7 bushels ice, daily, from January 1 to February 27, at 50 cents per bushel.....	175 00	
	10 bushels ice, daily, from February 8 to March 4, 1861, (Sundays excepted).....	20 00	
			1,584 87
L. J. Middleton.....	2 dozen dusters.....		195 00
M. H. Stevens & Co.....	Reporting additional testimony taken by the select committee on the subject of alleged abstraction of Indian trust bonds, at \$4 50 per column.....		42 00
Francis H. Smith.....	10 copies of Callan's Military Laws, at \$3 50 per copy.....	35 00	
John F. Callan.....	Less 3 copies returned.....	10 50	
			24 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
James Sheehy.....	Witness, 3 days, before select committee on the House library.....	-----	\$6 00
W. A. Groves.....	Folding documents, pay-roll for December, (from 5 to 31)	\$67 50	
J. D. Burt.....	do.....do.....do.....	67 50	
C. E. Lewis.....	do.....do.....do.....	67 50	
Elley Reynolds.....	do.....do.....do.....	67 50	
James A. Bowen.....	do.....do.....do.....(from 7 to 31)	62 50	
Thomas W. Phipps.....	do.....do.....do.....(from 11 to 31)	52 50	
O. A. Coburn.....	do.....do.....do.....(from 13 to 31)	47 50	
			432 50
W. A. Groves.....	Folding documents, pay-roll for January, 1861	77 50	
J. D. Burt.....	do.....do.....do.....	77 50	
C. E. Lewis.....	do.....do.....do.....	77 50	
Elley Reynolds.....	do.....do.....do.....	77 50	
James A. Bowen.....	do.....do.....do.....	77 50	
Thomas W. Phipps.....	do.....do.....do.....	77 50	
O. A. Coburn.....	do.....do.....do.....	77 50	
W. H. Eaton.....	January 19 to 31	32 50	
			575 00
W. A. Groves.....	Folding documents, pay-roll from February 1 to March 4, 1861, 32 days.....	80 00	
J. D. Burt.....	do.....do.....do.....	80 00	
C. E. Lewis.....	do.....do.....do.....	80 00	
Elley Reynolds.....	do.....do.....do.....	80 00	
James A. Bowen.....	do.....do.....do.....	80 00	
Thomas W. Phipps.....	do.....do.....do.....	80 00	
O. A. Coburn.....	do.....do.....do.....	80 00	
W. H. Eaton.....	do.....do.....do.....	80 00	
			640 00
George T. Whittington	Folding documents, pay-roll from February 1 to March 4, 1861.....	96 00	
J. S. Kellogg	do.....do.....do.....	96 00	
S. A. Parris.....	do.....do.....do.....	96 00	
W. C. Stone	do.....do.....do.....	80 00	
H. G. Divine.....	do.....do.....do.....	80 00	

W. DuBois.....	do	80 00
J. T. Chauncy.....	do	48 00
Gales & Seaton.....		576 00
 “National Intelligencer,” 2d session 36th Congress:		
Hon. G. B. Adrain, daily, 3 months		2 50
H. G. Blake, ditto.....		2 50
T. S. Bocock, weekly, 1 quarter.....		2 00
R. B. Brabson, daily, 1½ months.....		1 12
H. L. Dawes, daily, 2 month		1 67
C. Delano, daily, 3 months.....		2 50
W. M. Dunn, ditto		2 50
F. M. Edwards, daily, 2¾ months		2 10
J. Humphrey, daily, 3 months.....		2 50
G. Marston, daily, 2¼ months.....		2 10
H. Maynard, daily, 3 months.....		2 50
J. A. McClernand, ditto		2 50
R. McKnight, ditto.....		2 50
F. H. Morse, tri-weekly, 6 months.....		3 00
T. A. R. Nelson, daily, 3 months		2 50
M. A. Otero, ditto.....		2 50
J. S. Phelps, ditto		2 50
A. G. Porter, ditto		2 50
D. E. Sickles, ditto.....		2 50
Thaddeus Stevens, dally, 2 months.....		1 70
J. H. Thomas		10 00
C. A. Trimble, daily, 3 months		2 50
E. P. Walton, ditto.....		2 50
States and Union:		
Hon. William McKee Dunn, daily, 3 months.....		1 50
James Humphrey, ditto.....		1 50
J. A. McClernand, ditto		1 50
Newspapers		
Compensation for services as tally clerk in the House of Representatives, resolution of March 3, 1859, June 16, 1860, to February 16, 1861		1 00
Washing 108 dozen towels for bath room		240 00
Washing 47½ dozen towels		54 00
		23 87
 John Savage & Co.....		
Hon. John Hutchins.....		
R. W. Sherman.....		
Alexander Bruce		
Alexander Bruce		

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. B. Smith & Co.....	Making 228 binders' board boxes for Journals of the House of Representatives, 1st session 36th Congress, bound in two parts for governors of States and Territories, at 61 cents per piece	-----	\$139 08
Hon. S. C. Foster	Stationery	-----	19 98
Hon. Thaddeus Stevens.....	do.....	-----	11 17
John Wagner	Balance due on account of furniture, bill rendered May 22, 1850	\$239 15	
	Less \$5 overcharge	5 00	
			234 15
J. D. Wright	Page to Sergeant-at-Arms from June 25 to August 1, 36 days.....	72 00	
	Same for November, 1860	60 00	
	Same from March 5 to April 4, 1861	62 00	
			194 00
F. Emmerich.....	2 horses and carriages for the month of February, 1861, 28 days, at \$2 each per day ..	-----	112 00
John T. Mitchell	3,078 pounds superior twine, $\frac{5}{8}$	-----	1,923 63
G. & T. Parker & Co.....	2 boxes Windsor soap, \$15; 1 box honey soap, \$5; 100 pounds sponges, \$275	295 00	
	36 pounds patent candles, at 60 cents; 130 pounds washing soda, at 6 $\frac{1}{4}$ cents; 1 box Windsor soap, \$5; 40 pounds Castile soap, at 25 cents.....	44 73	
	1 gross matches, \$5; 48 pounds candles, at 60 cents; $\frac{1}{2}$ dozen chamois, \$1 50; 100 pounds soap, at 8 cents; 2 baskets, \$2 50	54 30	
	3 baskets, at 87 $\frac{1}{2}$ cents; 1 gross matches, \$5; 1 box Windsor soap, \$5; 20 pounds soap, at 8 cents; 2 baskets, \$2 50	19 23	
	280 pounds soap, at 8 cents; 36 pounds patent candles, at 60 cents; 30 pitchers, at 75 cents; 30 soap dishes, at 20 cents; 2 dozen tumblers, \$3.....	79 14	
	6 horse buckets, at 75 cents; 6 corkscrews, at 37 $\frac{1}{2}$ cts.; 4 painters' tin buckets, \$1 50.	12 75	
	4 painters large tin buckets, at \$2; 1 basket, \$2 50; 2 dozen ice picks, at \$1 50 per dozen; 1 dozen baskets, \$15.....	28 50	
	20 boxes English soap, at 75 cents; 2 dozen tumblers, \$5; 5 dozen spittoons, at \$7 50;	67 50	
	1 dozen hearth brooms, \$9	29 00	
	1 dozen snuff, \$15; 1 lamp, \$1 50; 200 pounds washing soda, at 6 $\frac{1}{4}$ cents.....		630 15
G. & T. Parker & Co.....	2 corkscrews, at 87 cents; 1 ditto, 37 $\frac{1}{2}$ cents	2 13	
	$\frac{1}{2}$ dozen office baskets, at \$15; 6 plated corkscrews, at \$1.....	13 50	

J. B. Bryan.....	2 funnels, at 25 cents; 1 basket, \$3; 60 pounds patent candles, at 60 cents.....	39 50	116 13
	2½ dozen brooms, at \$6; 40 boxes English brown Windsor soap, at 75 cents.....	45 00	
	200 pounds brown soap, at 8 cents.....	16 00	
J. B. Bryan.....	13 dozen towels.....	58 50	
	2 bottles marking ink, at 25 cents.....	50	
	Making 13 dozen towels.....	9 75	
	Washing, marking, and taping.....	19 50	
			88 25
Samuel Coones.....	Messenger and sweeping map office 3 months to February 1, 1861.....		12 00
A. H. Evans.....	Witness before select committee on House library.....		8 00
D. J. Bishop & Co.....	4 Reviews and Blackwood for Hon. I. Washburn, jr.....	10 00	
	Harper's Weekly for Hon C. B. Tompkins.....	2 50	
	Living Age, 2 years, for Hon. W. B. Maclay.....	12 00	
	Godey's Lady's Book for Hon. W. G. Whiteley.....	3 00	
	Arthur's Magazine for Hon. W. G. Whiteley.....	2 00	
	Harper's Magazine for Hon. J. S. Phelps.....	3 00	
	Hunt's Merchants' Magazine.....	5 00	
			37 50
H. A. Edmundson.....	Stationery, 1st session 36th Congress.....	23 30	
	Stationery, 2d session 36th Congress.....	15 34	
			38 64
A. B. Reed.....	Folding documents, pay-roll for February, 1861.....	100 00	
Samuel Phillips.....	do.....do.....do.....	100 00	
H. H. Clark.....	do.....do.....do.....	100 00	
J. R. Zimmerman.....	do.....do.....do.....	70 00	
I. J. Harrison.....	do.....do.....do.....	70 00	
A. H. Alcott.....	do.....do.....do.....	70 00	
Z. Brown.....	do.....do.....do.....	56 00	
W. J. Harris.....	do.....do.....do.....	56 00	
			622 00
W. A. Howard.....	Expenses incurred in the contested election case, Howard <i>vs.</i> Cooper, of the first congressional district of the State of Michigan, in the 36th Congress of the United States, provided for by a resolution of the House passed February 19, 1861.....		721 81
J. A. Shindell.....	Services in folding room of House of Representatives for February, 1861.....		100 00
S. Torbut.....	Cartage: 751 loads of public documents, at 50 cents.....		375 50
Samuel Torbut.....	Cartage: 658 loads of public documents, at 50 cents.....		329 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Samuel Torbut	5 horses and wagons in January, 1861, at \$2 per day each	\$310 00	
	1 saddle horse same time, at \$1 50	46 50	\$356 50
Samuel Torbut	5 horses and wagons in February, 1861, at \$2 per day	280 00	
	1 saddle horse same time, at \$1 50 per day	42 00	
H. W. Hoffman	Use of horse and carriage from June 25 to December 1, 1860, 158 days, at \$2	-----	322 00
	Use of horse and carriage for December, 1860	-----	316 00
	Use of horse and carriage for January, 1861	-----	62 00
	Use of horse and carriage for February, 1861	-----	62 00
	Use of horse and carriage for February, 1861	-----	56 00
George Marston	Use of 2 saddle horses from January 1 to March 4, 63 days, at \$1 50 each	189 00	
	Use of 1 horse and wagon for same time, at \$2 per day	126 00	315 00
Lawrence Bess	Services in folding room from January 1 to March 4, 1861	-----	212 90
C. Wendell	234 binders' board boxes for the House Journals, sent to governors of States and Territories, at 61 cents	-----	142 74
O. W. Coburn	Services in the folding room from February 15 to June 25, 1860, 131 days, at \$1 50 per day—resolution of March 2, 1861	196 50	
	Less amount paid for same time	71 01	125 49
Owen Lovejoy	Stationery, 1st session 36th Congress	-----	37 33
Isaac Ames	1 dozen Robjohn's inkstands, large	13 00	
	2 dozen Robjohn's inkstands, small	22 00	35 00
L. M. Keitt	Stationery	-----	22 50
D. E. Simes	do	-----	17 15
J. K. Morehead	do	-----	17 06
J. G. Bennett	“New York Herald” for members 1st session 36th Congress:	-----	
	Hon. J. L. M. Curry, daily, 12 months	7 00	
	W. E. Niblack, daily, 12 months	7 00	
	A. Wells, daily, 6 months	3 50	
	C. L. Vallandigham, daily, 12 months	7 00	

S. Colfax, daily, 6 months	3 50
A. G. Porter, daily, 6 months.....	3 50
John Cochrane, daily, 12 months.....	7 00
A. Burlingame, daily, 6½ months.....	3 84
M. R. H. Garnett, daily, 12 months.....	7 00
W. R. W. Cobb, daily, 6 months.....	3 50
Miles Taylor, daily, 12 months.....	7 00
Miles Taylor, weekly, 12 months.....	3 00
Sherrard Clemens, daily, 12 months.....	7 00
J. Humphrey, daily, 6½ months.....	3 84
David Clopton, daily, 12 months.....	7 00
James C. Jackson, daily, 6½ months.....	3 84
J. L. Pugh, daily, 12 months.....	7 00
W. Howard, daily, 6 months.....	3 50
J. McQueen, daily, 12 months.....	7 00
D. E. Sickles, daily, 6½ months.....	3 84
G. W. Hughes, daily, 6½ months.....	3 84
W. H. Pendleton, daily, 12 months.....	7 00
Robert McKnight, daily, 6 months.....	3 50
J. R. Barrett, daily, 6½ months.....	3 80
W. H. Hooper, daily, 6½ months.....	3 84
M. A. Otero, daily, 12 months.....	7 00
E. Estabrook, daily, 5½ months.....	3 14
William Smith, daily, 12 months.....	7 00
Lansing Stout, daily, 6½ months.....	3 75
William Allen, daily, 6 months.....	3 50
M. L. Bonham, daily, 6½ months.....	3 75
J. F. Farnsworth, daily, 6 months.....	3 50
J. S. Phelps, daily, 12 months.....	7 00
J. D. Ashmore, daily, 12 months.....	7 00
T. G. Davidson, daily, 6 months.....	3 50
J. A. Logan, daily, 6 months.....	3 50
R. Mallory, daily, 6 months.....	3 50
J. M. Quarles, daily, 6 months.....	3 50
H. C. Delano, daily, 6 months.....	3 50
T. C. Hindman, weekly, 6 months.....	1 50
T. C. Hindman, daily, 6 months.....	3 50
T. C. Hindman, weekly, 6 months.....	1 50
Sydenham Moore, daily, 6 months.....	3 50

A—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. G. Bennett—Continued			
	Hon. A. J. Hamilton, daily, 6 months	\$3 50	
	A. J. Hamilton, weekly, 6 months	1 50	
	J. E. Bouligny, daily, 12 months	7 00	
	W. C. Anderson, daily, 6 months	3 50	
	Peter E. Love, daily, 6 months	3 50	
	C. D. Martin, daily, 6 months	3 50	
	Shelton F. Leake, daily, 12 months	7 00	
	Reuben Davis, daily, 2½ months	1 46	
	Thomas Ruffin, daily, 12 months	7 00	
	G. A. Grow, daily, 6 months	3 50	
	D. C. De Jarnette, daily, 6 months	3 50	
	R. B. Brabson, daily, 4 months	2 35	
	L. M. Keitt, daily, 12 months	7 00	
	Thomas S. Boccock, daily, 12 months	7 00	
	George Briggs, daily, 4 months	2 35	
	George S. Houston, daily, 12 months	7 00	
	Charles H. Larrabee, daily, 12 months	7 00	
	W. R. W. Cobb, daily, 6 months	3 50	
	L. O'B. Branch, 2d session 36th Congress, daily, 12 months	7 00	
			\$288 64
J. G. Bennett	"New York Herald," 2d session 36th Congress :		
	Hon. G. B. Adrain, daily, 3 months	1 75	
	J. D. Ashmore, daily, 3 months	1 75	
	H. G. Blake, daily, 3 months	1 75	
	A. R. Boteler, daily, 3 months	1 75	
	J. E. Bouligny, daily, 6 months	3 50	
	R. B. Brabson, daily, 1½ month	80	
	George Briggs, daily, 3 months	1 75	
	J. Y. Brown, daily, 3 months	1 75	
	Sherrard Clemens, daily, 12 months	7 00	
	David Clopton, daily, 12 months	7 00	
	John Cochrane, daily, 3 months	1 75	

John Cochrane, for W. R. W. Cobb, daily, 12 months.....	7 00
S. Colfax, daily, 3 months.....	1 75
J. L. M. Curry, daily, 12 months.....	7 00
Thomas G. Davidson, daily, 2 months.....	1 33
D. C. De Jarnette, daily, 12 months.....	7 00
Emerson Etheridge, daily, 3 months.....	1 75
M. R. H. Garnett, daily, 12 months.....	7 00
M. R. H. Garnett, Lloyd's post office, daily, 2 months.....	1 20
J. Humphrey, daily, 3 months.....	1 75
J. A. Logan, daily, 2½ months.....	1 47
C. D. Martin, daily, 3 months.....	1 75
Robert McKnight, daily, 3 months.....	1 75
J. McQueen, daily, 12 months.....	7 00
J. J. McRae, daily, 12 months.....	7 00
Sydenham Moore, daily, 12 months.....	7 00
T. A. R. Nelson, daily, 3 months.....	1 75
W. E. Niblack, daily, 12 months.....	7 00
G. H. Pendleton, daily, 12 months.....	7 00
J. S. Phelps, daily, 9 months.....	5 25
J. L. Pugh, daily, 12 months.....	7 00
J. M. Quarles, daily, 3 months.....	1 75
Thomas Ruffin, daily, 12 months.....	7 00
D. E. Sickles, daily, 3 months.....	1 75
W. N. H. Smith, daily, 2 months.....	1 20
Thaddeus Stevens, daily, 3 months.....	1 75
J. H. Thomas, daily, 3 months.....	1 75
C. L. Vallandigham, daily, 12 months.....	7 00
Z. B. Vance, daily, 3 months.....	1 75
M. A. Otero, daily, 12 months.....	7 00
T. S. Bocock, daily, 12 months.....	7 00
W. C. Bryant & Co.....	158 25
“New York Evening Post,” 1st session 36th Congress:	
Hon. A. G. Porter.....	5 00
J. S. Morrill.....	5 42
C. L. Beale.....	5 00
E. G. Spaulding.....	5 42
J. A. Gurley.....	10 00
E. Wade.....	10 00
G. Marston, \$5; Hon. T. Stevens, \$5.....	10 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. C. Bryant & Co—Continued.....	Hon. J. F. Farnsworth.....	\$5 00	
	T. M. Edwards.....	5 00	
	J. M. Ashley.....	5 00	
	E. Thayer.....	5 00	
	S. Colfax.....	1 50	
	E. P. Walton.....	1 75	
	H. Waldron.....	1 50	
	J. H. Thomas.....	2 00	
	J. A. Bingham.....	3 00	
	B. F. Junkin.....	5 00	
	William A. Howard.....	5 00	
	J. Humphrey.....	5 42	
			\$96 01
Samuel Sinclair.....	"New York Tribune," 2d session 36th Congress:		
	Hon. J. M. Ashly, daily, 3 months.....	1 50	
	J. K. Barnett, daily, 5½ months.....	2 68	
	J. A. Bingham, daily, 3 months.....	1 50	
	H. G. Blake, daily, 3 months.....	1 50	
	Thomas S. Bocock, semi-weekly, 12 months.....	3 00	
	George Briggs, daily, 3 months.....	1 50	
	J. Buffinton, (bill from Tribune office).....	12 00	
	Charles Case, daily, 12 months.....	6 00	
	S. Colfax.....	1 62	
	H. L. Dawes.....	1 50	
	R. H. Duell.....	1 50	
	T. M. Edwards, daily, 3 months.....	1 50	
	Em. Etheridge, daily, 3 months.....	1 50	
	M. R. H. Garnett, daily, 3 months.....	1 50	
	J. A. Gurley, daily, 6 months.....	3 00	
	John Hickman, daily, 6 months.....	3 00	
	James Humphreys, daily, 3 months.....	1 50	
	David Kilgore, daily, 3 months.....	1 50	

De Witt C. Leach, daily, 3 months	1 50
Gilman Marston, daily, 2½ months	1 25
R. McKnight, daily, 3 months	1 50
Thomas A. R. Nelson, semi-weekly, 3 months	3 00
W. E. Niblack, semi-weekly, 12 months	3 00
J. W. Pettit, daily, 6 months	1 50
A. G. Porter, daily, 3 months	1 50
John F. Potter, daily, 3 months	6 00
Benjamin Stanton, daily, 12 months	6 00
Thaddeus Stevens, daily, 12 months	1 50
Eli Thayer, daily, 3 months	1 75
J. H. Thomas, semi-weekly	1 50
C. L. Vallandigham, daily	6 00
Ed. Wade, daily, 12 months	6 00
H. Waldron, daily, 12 months	6 00
W. G. Whitely, daily, 12 months	6 00
James Wilson, daily, 3 months	1 50

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“The Press,” 2d session 36th Congress :

Hon. G. B. Adrain, daily, 3 months	1 50
J. M. Ashley, daily, 3 months	1 50
J. R. Burnett, to March 4, 1861	2 25
S. S. Blair, daily, 1 year	6 00
H. G. Blake, daily, 3 months	1 50
L. C. Carter, daily, 3 months	1 50
S. Colfax, tri-weekly	1 75
H. L. Dawes, daily, 3 months	1 50
S. Edgerton	1 50
Em. Etheridge	1 50
John Hickman, daily, 6 months	3 00
W. A. Howard, daily, 3 months	1 50
J. Humphreys, daily, 3 months	1 50
G. Marston, daily, 2½ months	1 25
J. A. McClernand, daily, 3 months	1 50
R. McKnight, tri-weekly, 3 months	75
G. H. Pendleton, daily, 12 months	6 00
J. W. Pettit, daily, 3 months	1 50
A. G. Porter, daily, 3 months	1 50
D. E. Sickles, daily, 3 months	1 50

J. W. Forney

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
J. W. Forney—Continued	Hon. Thaddeus Stevens, daily, 3 months	\$1 50	
	Eli Thayer, daily, 3 months	1 50	
	C. A. Trimble, daily, 6 months	3 00	
	W. G. Whitely, bill for Daily Press	6 00	
	W. G. Whitely, bill for 1 year	6 00	
	3 copies for House library	18 00	\$75 50
L. M. Keitt.....	Newspapers, 2d session 36th Congress.....	-----	50 00
J. G. Bennett	"New York Herald," for 1st session 36th Congress:		
	Hon. A. R. Boteler, 6 months	3 50	
	C. S. Scott, 7 months	4 00	
	J. H. Thomas, 12 months	7 00	
J. W. McBeth.....	"McArthur's Journal," for C. D. Martin.....	-----	14 50
J. C. Rives.....	Reporting and printing the debates of the House of Representatives, from December		1 00
	4, 1860, to January 31, 1861, 506 ¹⁸⁸ / ₁₀₀ columns, at \$7 50 per column.....		
J. C. Rives.....	Reporting and printing the debates of the House of Representatives, from February		3,801 84
	1 to March 1, 1861, both inclusive, 553 ²⁸ / ₁₀₀ columns, at \$7 50 per column.....		
Alexander & Cooke.....	Binding 11,849 volumes Agricultural Patent Reports, 1859, at 12 cents per volume..	1,421 88	4,151 06
	Binding 6,994 volumes Mechanical Patent Reports, 1859, at 12 cts. per vol., (part 1)-	839 28	
	Binding 3,730 volumes Mechanical Patent Reports, 1859, at 12 cts. per vol., (part 2)-	447 60	
	Binding 664 volumes Smithsonian Reports, 1859, at 12 cents.....	79 68	
	Binding 609 volumes Covode Reports, at 12 cents	73 08	
Alexander & Cooke	Binding 90 copies Stevens's Pacific Railroad Report, vol. 12, part 1, at 85 cts. per vol..	76 50	2,861 52
	Binding 90 copies Stevens's Pacific Railroad Report, vol. 12, part 2, at 85 cts. per vol..	76 50	
Job W. Angus.....	Repairing 3 lounges for hall.....	3 50	153 00
	Repairing sash in cloak room.....	50	
	Top to Speaker's stand.....	1 50	
	Covering same with cloth.....	1 50	
	Covering Clerk's desk.....	3 00	

Cleaning and varnishing Clerk's desk	5 00
Cleaning and varnishing Speaker's chair	3 00
1 caster on chair	25
Repairing and varnishing boxes	1 00
Cleaning and varnishing 2 cases in hall	2 00
Putting up 4 cornices, Military Affairs	2 00
2 keys for key room door	1 50
Cleaning and varnishing furniture	109 00
Brass nosings to platform in hall	30 00
Cleaning and varnishing 4 large washstands	8 00
Cleaning and varnishing 2 small washstands	2 00
1 pound thread	1 50
34 $\frac{3}{4}$ yards tapestry Brussels carpet, at \$1 50	52 13
12 yards $\frac{3}{4}$ Venetian carpet, at \$1	12 00
50 yards oil-cloth, at \$1 50	75 00
$\frac{3}{4}$ pound thread	1 13
5 yards brown canton flannel	1 00
1 $\frac{3}{4}$ yards oil-cloth	2 50
144 yards sofa gimp	14 40
9 $\frac{1}{2}$ yards oil-cloth	14 25
1 desk in folding room	30 00
Cleaning and varnishing 250 desks, at \$2 50	625 00
Cleaning and varnishing 250 chairs, at \$1 50	375 00
Covering 250 desks with cloth	62 50
Whitewashing, cleaning, and scraping	30 00
Varnishing furniture in offices	48 00
12 sets casters in hall	24 00
9 clocks	9 00
50 rounds on platform	5 00
Putting up coat racks in key room	1 00
Ceiling up water closets in basements	12 00
Shelving in cloak room	1 00
Glass and moulding in east and west doors	3 00
10 keys to hall desks	5 00
Cleaning and varnishing water closets	8 00
3 pair spring hinges	36 00
Covering with carpet platform under doorkeeper's seat	2 50
3 chairs, House of Representatives	4 50
16 backs to chairs	16 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus—Continued.....	Repairing chairs in hall.....	\$25 00	
	Covering 2 doors in hall	5 00	
	Laying carpet and oil-cloth in document room.....	2 00	
	Covering table, Military Affairs.....	2 50	
	Repairing sofa in hall.....	4 00	
	2 dozen desk locks	40 00	
	Putting on gimp in galleries.....	25 00	
	Covering reporters' desks.....	6 00	
	2 lights plate glass.....	30 00	
	1 extra large cocoa mat.....	10 00	
	3½ yards white linen	2 00	
	3 yards enamelled cloth.....	2 25	
	2 yards oil-cloth	2 00	
	1½--do.....do.....	2 50	
	1½--do.....do.....	2 25	
	5½--do.....do.....	7 50	
	5½ yards enamelled oil-cloth.....	3 94	
	2 yards flowered oil-cloth.....	3 00	
	2 yards carpet binding.....	1 00	
	Painting room in old Capitol.....	150 00	
	6 springs, at \$4.....	24 00	
			\$1,997 10
H. W. Hoffman.....	Services rendered the select committee of the House, of which Hon. J. N. Morris was chairman, in summoning witnesses before said committee, and for travel in serving the same, and for telegraphic despatches, including expenses of the committee in New York.....		
H. W. Hoffman.....	Services rendered the select committee of the House of Representatives, of which the Hon. W. A. Howard was chairman, in summoning witnesses, and mileage of Sergeant-at-Arms.....		865 83
H. W. Hoffman.....	Services rendered the select committee of the House of Representatives, of which Hon. R. A. Pryor was chairman, in summoning witnesses, and travel of Sergeant-at-Arms		121 80
			74 20

H. W. Hoffman.....	Services (as Sergeant-at-Arms) to the select committee of which Hon. B. Stanton was chairman.....	2 20
Joseph D. Ward.....	Services in the old hall of the House of Representatives, attending furnaces under folding room from 7th of December, 1860, to the 31st day of January, 1861, fifty-six days, at \$3 per day.....	168 00
Joseph D. Ward.....	Services in the old hall of the House of Representatives, attending furnaces under the folding-room from February, 1861, twenty-eight days, at \$3 per day.....	84 00
	Same services, from 1st to 4th March, 1861.....	12 00
C. Bohn.....	1,000 plans of each House of Congress, with members' names, at 7½ cents each.....	96 00
	1,000 copies of Department Directory, with plans, &c., at 40 cents.....	150 00
		400 00
John C. Rives.....	24 sets of the Congressional Globe and Appendix, for 1st session 36th Congress, for three members and delegates, \$6 per set.....	432 00
C. B. Collan.....	Services as stenographer, employed by the select committee relative to contracts for labor in public store No. 12 Broad street, New York, from March 26, 1860, to June 15, 1860, eighty-one days, at \$4 per day, authorized by resolution of the House of January 16, 1861, (T. J. Barr, chairman).....	324 00
G. Marston.....	Sending messages, and for omnibus tickets during the 36th Congress.....	112 50
P. Barry Hayes.....	Cash paid for postage on official letters and packages, and for telegraphs.....	83 80
McGill & Witherow.....	Printing 90 pages of testimony for use of select committee on Indian trust bonds, abstracted from Interior Department, per resolution of February 19, 1861.....	100 80
E. M. Kern.....	2 picture frames, for Naval Affairs.....	34 72
J. T. Chauncey.....	Materials and repairs on the flag, for the year 1860.....	24 87
John Miner.....	7 days' work in the House post office.....	10 50
C. W. Heydon.....	Repairing clock, stationery room.....	4 00
T. D. Harris.....	Registering bills and reports of the Committee of Claims, and making out index to the same during both sessions of the 34th Congress, at \$250 per session.....	500 00
	Also, for copying matter ordered to be printed during the 32d, 33d, and 34th Congresses.....	300 00
Capitol police.....		800 00
	Pay-roll for March, in part:	
	M. McConnell.....	21 07
	Jacob Fleishell.....	21 07
	S. C. Wailes.....	21 07
	Moses Foster.....	21 07
	Joseph Reese.....	21 07
	Isidore Morrice.....	21 07
	F. A. Kloppe.....	21 07

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
Capitol police—Continued			
James B. Smith.....	Stationery, as follows, viz:		\$294 96
	40 reams laid quarto post, gilt.....	150 00	
	30 gross Gillot's bbl. pens.....	120 00	
	24 dozen black swan card pens	30 00	
	2 gross Perry's 3-pointed pens, cards	7 00	
	4 dozen Maynard & Noyes' ink, quarts.....	11 80	
	4 dozen Maynard & Noyes' ink, pints.....	7 80	
	10 reams Home Mills cap paper.....	37 50	
	2 dozen extra wide ivory folders.....	12 00	
	1 dozen ivory knives.....	6 00	
	1 dozen ivory knives, extra quality.....	10 80	
	17½ reams Arnold's laid gilt note.....	44 38	
	1¾ dozen 4-inch flat inkstands.....	10 50	
	11½ dozen 4-inch fancy inkstands	18 00	
	24 gross Perry's pens, No. 28.....	20 40	
	50 gross J. B. S. & Co.'s I X L pens	42 50	
	25 gross Knap & R. pens.....	21 25	
	48 penknives.....	96 00	
	24 penknives	60 00	
	20 gross Perry's pens, No. 27.....	17 00	
	50 gross X Y L steel pens.....	42 50	
	25 reams white laid Congress, letter gilt.....	112 50	
	25 reams white laid commercial note	62 50	

J. B. Smith	6 dozen pencil sharpeners	9 00
	21 1/2 dozen penknives	87 50
	3 dozen Knock's inks	18 00
	8 pairs 12-inch shears	16 00
	7 gross Gillot's barrel pens	28 00
	3 dozen black swan pens	2 25
	18 glass inkstands	22 50
	6 glass inkstands, extra	15 00
	3 dozen large knives	27 00
	25,000 white envelopes	87 50
	6 dozen tin boxes wax matches	18 00
	12 pairs large scissors	12 00
	12 gross penholders	36 00
	7 1/2 dozen penholders, silver tips	18 13
	14 elastic memorandum	10 50
	4 reams Arnold's cream commercial note, gilt	10 00
	25 reams white laid Congress cap, extra heavy	80 00
	3 dozen India-rubber pencils	22 50
	25 reams white laid Congress letter, gilt	112 50
J. B. Smith	14 dozen glass inkstands	18 75
	1.....do.....	12 00
	6.....do.....	36 00
	1.....do.....extra	36 00
	6 gross Perry's barrel pens	24 00
	25 reams gilt note	50 00
	20 reams extra heavy gilt letter	90 00
	4 dozen David's carmine ink	12 00
	4 dozen David's blue ink	14 00
	2 dozen ivory paper knives—1 at \$24, and 2 at \$15	54 00
	4 dozen India-rubber pencils	30 00
	42 dozen penknives, assorted	84 00
	17 dozen penknives, extra	42 50
	6.....do.....	9 00
	6.....do.....	6 00
	25,000 light buff envelopes	100 00
	20,000 white letter envelopes	55 00
	20,000 white letter envelopes, large size	65 00
	50 reams cut tissue paper	25 00

1,572 81

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. B. Smith—Continued.....	25 reams gilt note paper	\$50 00	
	15,000 light buff envelopes.....	60 00	\$867 25
J. B. Smith	2 dozen Wostenholm's knives	48 00	
	5.....do.....do	72 00	
	100 reams cut Manilla	50 00	
	15 reams white laid Congress cap.....	56 25	
	40,000 white laid envelopes, large letter.....	140 00	
	30,000 reams white laid commercial note.....	67 50	
	12 gross Perry's blue barrel pens	48 00	
	3 dozen Wostenholm's knives	54 00	
	1.....do.....do.....large	24 00	
W. A. Taliaferro	Attending furnaces in old hall from December 1, 1860, to March 4, 1861, 94 days.....	559 75	
Alexander Bruce	Services in bath-room from January 12 to March 4, 1861, 52 days.....	141 00	
J. B. Trenholm	Page in the House of Representatives from January 1 to February 6, 1861.....	78 00	
Elley Reynolds.....	59 buckets of paste.....	74 00	
J. B. Smith & Co.....	Binding documents 1st session 36th Congress : 514 copies Pacific Railroad Surveys, vol. 12, part 2.....	59 00	
W. H. McKenney	Folding documents, pay-roll for March, 1861.....	514 00	
J. T. Bryan	do.....do.....do	16 92	
Thomas Haggerty	do.....do.....do	24 67	
H. Weaver.....	do.....do.....do	24 35	
F. Smith	do.....do.....do	31 27	
J. Hough.....	do.....do.....do	21 14	
A. Swigert.....	do.....do.....do	38 72	
C. Thaw.....	do.....do.....do	18 70	
S. Lenau.....	do.....do.....do	19 99	
	do.....do.....do	22 79	
C. H. Van Wyck.....	Stationery.....	218 55	
Sydenham Moore.....	do.....do.....do	24 09	
J. & E. Brooks.....	"New York Evening Express," 1st session 36th Congress, for—	6 35	

28	25	4	25
28	25	4	00
28	25	4	00
28	25	4	00
28	25	4	00
28	25	4	00
28	25	2	00
28	25	2	00
28	25	2	00
28	25	2	00
28	25	1	50
28	25	1	50
28	25	1	50
28	25	1	10
28	25	1	00
28	25	1	75
28	25	1	75
28	25	2	00
28	25	962	40
28	25	468	48
28	25	120	00
28	25	120	00
28	25	120	00
28	25	318	75
28	25	83	75
28	25	28	75
28	25	97	50
28	25	5	00
28	25	2	50
28	25	2	50
28	25	2	50
28	25	1,790	88
28	25	862	25

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
R. Griffin	Washing 62½ dozen towels, in February, 1861.....	-----	\$31 42
J. M. Lucas	Printing slips of directory.....	-----	25 00
James Bush.....	Hacks Nos. 147 and 43 at funeral of Hon. John Schwartz.....	-----	10 00
Z. D. Gilman	5 flesh brushes for bath rooms	-----	6 50
Taylor & Maury	Stationery, viz:		
	Blank book	\$0 25	
	1 box quill pens	62	
	1,000 card envelopes.....	3 50	
	20 reams gilt note paper, ruled	60 00	
	5 reams note paper.....	13 75	
	6 cap portfolios.....	19 50	
	6....do	16 50	
	8 letter portfolios.....	18 00	
	6....do	16 50	
	6....do	10 50	
	4....do	17 00	
	4....do	15 00	
	4....do	18 00	
	50 boxes sealing wax.....	75 00	
	50 pounds twine.....	31 25	
	20,000 letter envelopes.....	75 00	
	4 dozen mucilage	20 00	
	3 boxes steel pens.....	1 50	
	1 inkstand.....	1 25	
	1 blank book	3 25	
	1 large ruler.....	75	
	1 folder.....	75	
	2½ dozen large pearl knives.....	75 00	
	10 boxes steel pens	15 00	
	2 indexes, cap size.....	50	
	2 sets brass instruments	1 00	
	2 sets German silver instruments	3 00	

23 dozen square glass inks.....	172 50	
22½ do.....do..... sands	170 00	
4 pounds gum.....	6 00	
6 reams ruled note paper, gilt.....	16 50	
6 reams note paper.....	16 50	
1,000 card envelopes.....	3 50	
2,000 do.....do.....	7 00	
2 blank books.....	4 50	
4 pages note paper.....	4 00	
500 letter envelopes (mourning).....	3 75	
1 blank book, \$1 25; 6 pearl folders, \$4 50	5 75	
1 dozen scissors, \$3 50; 2 cases scissors, \$12	15 50	
4 cases.....do.....	20 00	
1 dozen diaries.....	12 00	
1 do.....do.....	9 00	
1 dozen paper weights.....	12 00	
4 dozen scrap books.....	2 63	
1 dozen cards pens.....	4 50	
10 reams large paper.....	65 00	
10 do.....note.....do.....	27 50	
15 folders.....	11 25	
3 large glass paper weights.....	6 00	
3 small.....do.....do.....	5 25	
6 cut glass weights.....	10 50	
15 reams fine ruled English note paper.....	45 00	
8 reams ruled note paper.....	22 00	
10 reams thick note paper, ruled and gilt.....	32 50	
12 dozen red tape.....	3 00	
1 blank book.....	3 50	
		1,374 00
Stationery delivered Hon. G. S. Houston.....	1 75	
Do.....do.....Hon. D. C. Jarnette.....	12 61	
		13 91
30,000 document envelopes.....	90 00	
36,000 do.....do.....do.....	108 00	
		198 00
Drawing and engraving on wood (and furnishing electrotypes of eight pages of same) the illustrations for Report of the Commissioner of Patents on Agriculture, for 1860.....		450 00
Taylor & Maury.....		
Taylor & Maury.....		
Van Ingen & Snyder.....		

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Van Ingen & Snyder	Drawing and engraving on wood 8 diagrams for report of Captain G. A. Magruder on rifled cannon, &c., (House Executive Document, No. 43, 2d session 36th Congress,) at \$6 25 each	\$72 50	\$50 00
C. W. C. Dunnington	Capitol police, pay-roll for March, 1861	45 84	
A. K. Arnold	do	45 84	
J. T. Ball	do	45 84	
Samuel J. Johnson	do	45 84	
W. H. Thompson	do	45 84	
Thos. C. Wells	do	45 84	
Jno. P. Hamlin	do	45 84	
Frederick Fritz	do	45 84	
Francis Reily	do	45 84	
James S. Magee	do	45 84	
Michael French	do	45 84	
J. N. Crockwell	do	45 84	
Thos. Proby	do	45 84	
B. F. Beveridge	do	30 84	
Jere'h Boyd	do	30 84	
Richard D. Slater	do	15 00	
John Costin	Laborer, pay-roll for March, 1861	62 00	701 76
Levi Neal	do	46 50	
W. H. Smith	do	46 50	
William Twine	do	46 50	
R. Griffin	do	26 00	
David Fisher	do	40 50	
John Johnson	do	40 50	
Lewis Saunders	do	40 50	
Edward M. Thomas	do	40 50	
Sam'l Lee	Mail boy, pay-roll for March, 1861	75 00	389 50

A. G. Myers	do	75 00	150 00
Wm. Hartough	Messenger for south wing for March, 1861		125 00
I. Entwisle	Engineer, pay-roll for March, 1861	125 00	
M. R. Shankland	do	100 00	
D. A. McElhone	do	100 00	
Jos. Mansfield	do	62 00	
Thomas Hunt	do	62 00	
Sylvester Adams	do	62 00	
William Sanderson	do	62 00	
William Mooney	do	62 00	
W. C. Harte	Page, pay-roll, (under resolution of March 2, 1861) from February 7 to March 9, 1860	64 00	635 00
George Boyd	do	64 00	
Jesse E. Dow	do	64 00	
E. H. Moran	do	64 00	
J. W. Kearns	do	64 00	
H. A. Johnson	do	64 00	
J. B. Trenholm	do	74 00	
J. Bastianelli	do	64 00	
C. B. Hinton	do	60 00	
William Fudge	Temporary mail boy, pay-roll for March, 1861	50 00	582 00
H. J. Schreiner	do	50 00	
E. H. Brink	Services as folder for February, 1861		100 00
Mary Thomas	Services in ladies' retiring room from February 1 to March 4, 1861, 32 days		60 00
George Chapman	Temporary clerk, pay-roll for March, 1861	150 00	32 00
J. R. Briggs, jr	do	150 00	
W. Averill	do	150 00	
A. R. Parker	Services as draughtsman on land maps for March, 1861		450 00
James Cobean	Services in the office of the House of Representatives from March 4 to 31, 1861		180 00
Julius Bien	Engraving and printing 1,550 copies of "Map of the Little Spokarll Falls," for report of Lieutenant Mullan (House Ex. Document, No. 44, 2d session 36th Congress)		135 00
Philp & Solomon	Stationery, viz:		40 00
	5 dozen Perry's 3-pointed pens	62	
	1 pound sealing wax	1 50	
	1 glass inkstand	1 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

CONTINGENT EXPENSES OF

To whom paid.	For what object.	Amount.	Total.
Philp & Solomon—Continued.....	1 dozen letter files.....	\$1 12	
	1 do.....do.....	75	
	24 gross Cohen's pens.....	18 00	
			\$22 99
Burton Craige.....	Stationery.....		6 61
C. P. Johnson.....	"Delaware Gazette," for W. G. Whiteley.....	2 00	
	Do.....do.....	1 00	
			3 00
J. D. B. Littell.....	Folding documents, pay-roll for March, 1861.....	103 33	
Samuel Phillips.....	do.....do.....	100 00	
H. H. Clark.....	do.....do.....	100 00	
I. J. Harrison.....	do.....do.....	77 50	
J. R. Zimmerman.....	do.....do.....	77 50	
A. H. Alcott.....	do.....do.....	77 50	
Z. Brown.....	do.....do.....	62 00	
W. J. Harris.....	do.....do.....	62 00	
John Massey.....	do.....do.....	40 50	
			700 33
G. N. Beale.....	Services in office House of Representatives for March, 1861.....		100 00
Stillman Moores.....	Services in folding room for March, 1861.....		96 00
E. H. Brink.....	Services in the folding room from 1st to 6th March, 1861.....	11 61	
	Do.....do..... from 7th to 31st March, 1861.....	83 33	
			94 94
J. D. Burt.....	Services in the folding room from March 4 to 31, 27 days, at \$2 50.....		67 50
Jas. Merrinar.....	Services in the folding room from March 7 to March 31, 1861.....		48 39
Elly Reynolds.....	45 buckets of paste, in March.....		45 00
W. T. Evans.....	Services in House library from March 5 to March 31, 1861.....		40 50
Ed. Burke.....	Services in folding room from March 5 to March 31, 1861.....		40 50
J. A. Shindell.....	Services in folding room from March 1 to March 6, 1861.....		16 67
J. W. Jones.....	Horse and wagon for March, 1861.....		62 00
W. T. Dove.....	Gas fitting and repairs: Steel spring, 75 cents; gas fitter and assistant, 2 days, \$8.....	8 75	

Gas fitter and assistant, 1 day.....	4 00
16 pounds solder, \$5 60; plumber and assistant, 1 day, \$4	9 60
Gas fitter and assistant, 1 day.....	4 00
Plumber and assistant and gas fitter and assistant, each, 1 day.....	8 00
5 pounds sheet lead, 50 cents; plumber and assistant and gas fitter and assistant, each, 2 days, \$16.....	16 50
Plumber and assistant and gas fitter and assistant, each, 1 day.....	8 00
Iron rod, 50 cents; 15 pounds zinc, \$2 40	2 90
Gas fitter and assistant, 1 day	4 00
Copper rivets, 75 cents; 1 quart neatsfoot oil, 31 cents.....	1 06
4 pounds solder, \$1 40; plumber and assistant, 1½ day, \$6	7 40
Gas fitter and assistant, 1 day.....	4 00
103 pounds lead pipe, \$10 30; plumber and assistant, \$9	18 30
Gas fitter and assistant, 1 day.....	4 00
1 half-inch stop-cock, \$1 25; 1 pair couplings, 75 cents.....	2 00
Gas fitter and assistant, 2¾ day.....	11 00
Plumber and assistant, 4 days.....	16 00
9 pounds lead pipe, 90 cents; 1 ½ coupling bibb, \$2 25.....	3 15
1 coupling, 75 cents; 2 fittings, 50 cents	1 25
1 paper copper tacks, 88 cents; 2 pounds fine solder, 76 cents	1 64
Plumber and assistant, 8½ days.....	34 00
Gas fitter and assistant, 6 days.....	24 00
1,292 pounds pipe, at 10 cents.....	129 20
Plumber and assistant, 3½ days.....	14 00
Gas fitter and assistant, 2 days.....	8 00
5 pounds fine solder, \$1 90; 2 walnut washstands, at \$20, \$40	41 90
1 Tennessee marble slab for washstand	30 00
1 white marble slab	16 00
2 marbled wash-basins.....	5 50
2 silver-plated basin cocks.....	4 00
1 14-inch wash-basin, \$2 75; 1 silver-plated basin cock, \$4 50	7 25
1 plated basin plug, \$1 75; 6 pounds lead pipe, 60 cents	2 35
2 plated chains, 48 cents; 1 pound candles, 18 cents.....	66
1 gross screws	62
Plumber and assistant, 2½ days.....	10 00
Gas fitter and assistant, 1 day.....	4 00
50 pounds white lead	6 25
500 pounds cotton waste, at 16 cents.....	80 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job W. Angus.....	109 packing boxes.....	\$272 50	
	Strapping 16 of same.....	8 00	
	65 packing boxes.....	162 50	
	Repairing 3 locks.....	2 00	
	6 needles.....	50	
	2 keys for water-closets.....	1 50	
	2 drawer keys.....	1 00	
	Strapping 16 boxes.....	8 00	
	Strapping 11 boxes.....	5 50	
	Changing 10 locks in committee rooms.....	5 00	
	Repairing 1 lock.....	1 00	
	Strapping 16 boxes.....	8 00	
	Repairing east door and knobs.....	3 00	
	Changing 11 locks in committee rooms.....	11 00	
	Strapping 8 boxes.....	5 50	
	2 bolts in folding room.....	1 25	
	Hasp and padlock.....	1 75	
	Changing lock and key.....	1 00	
	Closet for bath room.....	8 00	
	Stand for water-cooler.....	1 50	
	Setting glass in library door.....	1 50	
	2 pairs brass hinges.....	1 00	
	Repairing door in corridor.....	1 50	
	1 pair hinges, 25 cents; 1 knob, 75 cents.....	1 00	
	Cord, and hanging door.....	50	
	24 paste brushes.....	7 20	
	Repairing table and drawers.....	2 00	
	Covering same with cloth.....	3 00	
	Keys for drawers for same.....	1 00	
	9 sets casters for committee rooms.....	3 75	
	Casters on 4 chairs in Clerk's office.....	3 50	
	46 pounds nails.....	2 76	

[illegible]

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
James B. Smith & Co	Binding the following blank books in full Russia, viz:		
	1 10-quire Minute Book	\$10 00	
	1 3-quire medium Day Book	6 00	
	1 4-quire medium Ledger	8 00	
	1 5-quire medium Detailed Statement Book	10 00	
	1 6-quire medium Newspaper Book	12 00	
	1 8-quire medium Petition Book	16 00	
	1 7-quire medium royal Bill Book	17 50	
	Printing 21 quires	10 50	
	3 sets of Morocco titles lettered in gold	7 50	
	245 Morocco titles, and lettering in gold, for House library, at 25 cents	61 25	\$158 75
J. B. Smith & Co	200 reams Manila paper, 19 by 24, at \$2 40	480 00	
	180 reams Manila paper, large, 24 by 40, at \$4 60	828 00	
	300 reams extra buff envelopes, 3½ by 6¾, at \$3	900 00	2,208 00
John C. Rives	"The Daily Globe," as follows:		
	1 copy to E. Rothe, Watertown, by C. H. L.	3 00	
	3 copies to Hon. J. B. Clark	9 00	
	12 copies to offices Committee of Ways and Means and House library	39 00	
	1 copy to Jno. Hancock, by C. H. L.	3 00	
	1 copy to Z. B. Vance	15 50	
	1 copy to hall library	3 00	
	5 copies ordered by Hon. L. Stout	15 00	87 50
Samuel Bowles & Co	"Springfield Republican," 1st and 2d sessions 36th Congress:		
	Hon. H. L. Dawes, 6½ months	2 75	
	H. L. Dawes, 3 months	1 50	
	F. P. Blair	5 00	
F. P. James	Witness, 1 day, before select committee on frauds in Interior Department	2 00	9 25

S. A. Power.....	Travel from and to New York	48 00	50 00
Samuel Torbert	Services in the office of House of Representatives, folding documents, March, 1861.....	-----	100 00
Samuel Torbert	Hauling 826 loads of public documents in February, 1861.....	-----	413 00
Samuel Torbert	5 horses and carryalls, for March, 1861.....	310 00	
Alexander & Cooke.....	1 saddle horse, for same time, 1861	46 50	356 50
	Binding the following public documents, viz:		
	1,833 volumes Finance Reports, 1860-'61, at 12 cents	219 96	
	1,734 volumes Message and Documents, part 2, 1860-'61, at 12 cents	208 08	
	10,440 volumes Message and Documents, abridged, 1860-'61, at 12 cents	1,252 80	
	1,540 volumes Commerce and Navigation, 1860.....	184 80	
	14,375 volumes Agricultural Patent Report, 1859	1,725 00	
	1,724 volumes Pacific Railroad Report, volume 12, part 1, at 85 cents.....	1,465 40	
	750 volumes Pacific Railroad Report, volume 12, part 2, at 85 cents.....	637 50	
Alexander & Cooke.....	Binding 4,020 volumes Pacific Railroad Report, volume 12, part 1, 1st session 36th Congress, at 85 cents	3,417 00	5,693 54
	Binding 767 volumes Pacific Railroad Report, volume 12, part 2, 1st session 36th Congress, at 85 cents	651 95	
	Binding 1,600 volumes Coast Survey Report, 1859, at 40 cents	640 00	
	Binding 8,500 volumes Agricultural Patent Report, 1859, at 12 cents	1,020 00	
J. T. Mitchell.....	4,071 pounds superior flax twine, at $\frac{5}{8}$ cent.....	-----	5,728 95
W. H. H. Barclay	19 cords hickory wood, delivered.....	142 50	2,544 37
	Sawing same, and packing.....	38 00	
Thomas H. Cross.....	Cartage of 3 loads, at 50 cents.....	-----	180 50
John C. Rives.....	117 sets (6 volumes each) Congressional Globe and Appendix, 34th Congress, for distribution to certain libraries, under act of March 3, 1857, at \$5 per volume.....	-----	1 50
N. C. Stone.....	Services in folding room of House of Representatives, for April, 1861, at \$2 50.....	-----	3,510 00
W. T. Evans.....	Services in the House library, and folding documents, for month of April, 1861.....	-----	75 00
Ed. Burke	Services, folding documents in the office of House of Representatives, April, 1861.....	-----	45 00
Isaac Entwisle.....	Engineer, pay-roll for April, 1861	-----	45 00
M. R. Shankland	do.....do.....	125 00	
D. A. McElhone.....	do.....do.....	100 00	
W. Sanderson.....	do.....do.....	100 00	
Sylvester Adams.....	do.....do.....	60 00	
Thomas Hunt.....	do.....do.....	60 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. Mooney.....	Engineer, pay-roll for April, 1861.....	\$60 00	
J. Mansfield.....	do.....do.....	60 00	\$625 00
G. H. Chapman.....	Temporary clerk, pay-roll for April, 1861.....	150 00	
J. R. Briggs.....	do.....do.....	150 00	
William Averill.....	do.....do.....	150 00	
J. B. Smith & Co.....	Rebinding, fitting, and lettering books for House library: 40 volumes Congressional Debates, full sheep, at 75 cents..... 3 volumes Executive Documents, 21st and 22d Congresses..... 187 volumes with titles and letters, at 25 cents..... 2 volumes Laws United States..... 37 volumes Miscellaneous Documents..... 4 volumes Congressional Globe, quarto..... 1,213 volumes retitled at lettered, at 25 cents..... 5 volumes Indian Researches, quarto, at \$1.....	30 00 2 25 46 75 1 50 27 75 5 00 303 25 5 00	450 00
Samuel Lee.....	Mail boy, pay-roll for April, 1861.....	75 00	421 50
A. G. Myers.....	do.....do.....	75 00	
G. B. Wooldridge.....	Services in the office of House of Representatives, folding documents, &c., April, 1861.....		150 00
S. A. Power.....	Messenger at Clerk's desk, and folding documents, April, 1861.....		100 00
C. W. C. Dunnington.....	Capitol police, 23 days, from April 1 to 23, 1861.....		100 00
John C. Rives.....	24 copies Congressional Globe and Appendix, for each member and delegate, 2d session 36th Congress, 242 in number, making 5,808 volumes, at \$3 each.....		54 97
John C. Rives.....	24 copies Congressional Globe and Appendix, for each new member, during 2d session 36th Congress, being 2 in number, making 48 copies, at \$3 per copy.....		17,424 00
J. D. B. Littell.....	Folding documents, pay-roll for April, 1861.....		144 00
Samuel Phillips.....	do.....do.....	100 00	
H. H. Clark.....	do.....do.....	100 00	
J. J. Harrison.....	do.....do.....	75 00	
J. R. Zimmerman.....	do.....do.....	75 00	

A. H. Walcott.....	do.....do.....do.....	75 00
Zach. Brown.....	do.....do.....do.....	60 00
W. J. Harris.....	do.....do.....do.....	60 00
John Massey.....	do.....do.....do.....	45 00
E. H. Brink.....	Services in the office of House of Representatives, for April, 1861, folding documents.	690 00
Elley Reynolds.....	6 buckets paste.....	100 00
George N. Beale.....	Services in stationery and folding rooms in the office of House of Representatives, from April 1 to 15, 1860, at \$1,200 per annum.	60 00
John Costin.....	Laborer, pay-roll for April, 1861.....	49 45
Levi Neal.....	do.....do.....do.....	60 00
W. H. Smith.....	do.....do.....do.....	45 00
William Twine.....	do.....do.....do.....	45 00
R. Griffin.....	do.....do.....do.....	26 00
David Fisher.....	Laborer, pay-roll for April, 1861.....	45 00
John Johnson.....	do.....do.....do.....	45 00
Lewis Sanders.....	do.....do.....do.....	45 00
Ed. M. Thomas.....	do.....do.....do.....	45 00
Alexander Bruce.....	Services in bath room, April, 1861.....	180 00
W. T. Dove.....	2½ feet 1-inch steam pipe, 57 cents, and 1 day, gas fitter and assistant, \$4.	45 00
	8½ pounds solder, \$2 98; 4 pounds putty, 25 cents.....	4 57
	2 days, plumber and assistant.....	3 23
	4 feet 1½-inch iron pipe, \$1 20; 4 pounds plumbers' hooks, \$1.....	10 00
	1 barrel charcoal, 30 cents; 1½ day, plumber and assistant, \$6; 1 day, gas fitter and assistant, \$4.....	2 20
	1 day, plumber and assistant, \$4; ditto, \$4.....	10 30
	2 pounds plumbers' books, 50 cents; 2 days, plumber and assistant, \$8.....	8 00
	1 barrel charcoal, 30 cents; 2 days, plumber and assistant, \$8.....	8 50
	116 feet 1½-inch iron pipe, \$34; 72 pounds lead pipe, \$8.....	8 30
	7 1½-inch fittings, \$2 80; 2¼ sto. cocks, \$2 76.....	42 00
	26 pounds solder, \$9 10; 1 2-inch lead trap and overflow, \$5.....	5 56
	1 ½ rough stop, \$1; 1 ¾ coupling, \$1 50; 2 days, plumber and assistant, \$8.....	14 10
	2 days, plumber and assistant, \$8; 1½ day, plumber and assistant, \$6.....	10 50
	2 pounds plumbers' hooks, 50 cents; 1½ day, plumber and assistant, \$6.....	14 00
	1 gas fitter and assistant.....	6 50
	½ pound candles, 9 cents; 1½ day, plumber and assistant, \$6.....	4 00
	1 day, gas fitter and assistant, \$4; 1 day, laborer, \$1 25.....	6 09
		5 25

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. T. Dove—Continued.....	3 days, plumber and assistant, \$12; 2 days, gas fitter and assistant, \$8.....	\$20 00	
	1 pound candles, 20 cents; 1½ day, plumber and assistant, \$6; 1 day, gas fitter and assistant, \$4.....	10 20	
	1½ day, plumber and assistant, \$6; 1 day, mason, \$2; 1 day, gas fitter and assistant, \$4.....	12 00	
	1 silver-plated basin cock, \$4 50; 1 plated chain stand, \$1.....	5 50	
	2 feet plated chain, 50 cents; 27 pounds corrugated zinc, at 40 cents, \$10 80.....	11 30	
	2 days, plumber and assistant, \$8; 1 day, gas fitter and assistant, \$4; 1 day, mason, \$2.....	14 00	
	2 days, plumber and assistant, \$8; 1 day gas fitter and assistant, \$4; 1 day, mason, \$2.....	14 00	
	40½ feet 1½-inch iron pipe, \$10 09; 5 1½-inch sockets, \$1 50.....	11 59	
	1½ day, plumber and assistant, \$6; 1 day, gas fitter and assistant, \$4.....	10 00	
	108½ pounds lead pipe; 1½ day, plumber and assistant, \$6; gas fitter and assistant \$4.....	20 85	\$292 54
L. Clephane & Co.....	"National Republican" furnished:		
	Hon. H. G. Blake, 3 months.....	88	
	Charles Case, 1 year.....	3 00	
	R. H. Duell, 3 months.....	88	
	B. Stanton, 1 year.....	3 50	
	C. B. Tompkins, 1 year.....	3 50	
	I. Washburn, jr., 1 year.....	3 50	
	Folding documents, April, 1861—		15 26
J. S. Kellogg.....	at \$3.....	90 00	
W. R. Baxter.....	at \$3.....	90 00	
Weare Tappan.....	at \$3.....	90 00	
H. G. Divine.....	at \$2½.....	75 00	
D. D. Johnson.....	at \$2½.....	75 00	
John T. Chancey.....	at \$1 50.....	45 00	
J. W. Angus.....	Furniture and repairs:		465 00
	Repairs on stable.....	2 00	
	Padlock, hasp, and staples.....	2 00	

Carpenter's work, for plumbers.....	5 00
Repairing sofa	1 00
12 sets of casters, sofas	12 00
Repairing sofa	1 00
Repairing door, Public Buildings and Grounds	3 00
Strapping box	50
Strips and hanging maps	2 00
1 box	2 50
2 locks in water-closet	3 50
Repairing and setting washstand	4 00
Varnishing same	1 00
3 extra keys, for water-closets	2 25
Repairing door, Post Office and Post Roads	75
Repairing and hanging door, bath room	3 50
Hinges for same	2 00
1 mortice lock	4 00
2 gross screws	1 25
12 locks, in Claims	12 00
12 knobs, for same	1 50
4 locks, in Judiciary	4 00
1 key, for Clerk's room	50
Removing furniture, Post Office	10 00
75 hooks, and putting up, Post Office	3 00
1 gross screws	62
Repairing and setting washstands	3 50
Hanging glass in folding-room	2 00
Strapping 2 boxes	1 00
Work to preserve the building from damage by the soldiers	20 00
1 key, for basement	1 00
53 packing boxes	132 50
1 key, for Sergeant-at-Arms room	1 00
1 key, for store-room	1 00
Removing furniture from room occupied by the 7th regiment of New York, to save damage	25 00
Taking down eighty sets curtains and stowing away same	80 00
Taking up and cleaning 25 carpets	62 50
Taking down and storing 12 cornices	12 00
Putting up 3 cornices	1 50
Putting down and repairing carpet	4 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. W. Angus—Continued	6 knobs, for water-closet.....	\$0 75	
	Hasp, for cloak room	25	
	Repairing chairs in Doorkeeper's room.....	75	
	1 key, for Committee Revolutionary Claims.....	1 00	
	1 night latch	1 00	
	Repairing window, Agricultural room	5 00	
	Removing furniture from offices	7 00	
	6 keys, for same	6 00	
	2 drawer keys	1 00	
	1 box, for clerks.....	1 00	
	2 door keys, for gallery.....	2 00	
	2 keys, for Clerk's office.....	1 00	
	4 keys, for water-closet	3 00	
	Moving furniture.....	4 00	
	Laying carpet, in Indian Affairs.....	4 00	
	Hanging clock	2 00	
	Strapping 6 boxes.....	3 00	
	1 key, for bath room.....	2 00	
	1 lock, for vault.....	1 50	
	1 night latch	1 50	
	Removing furniture and cleaning Judiciary room	2 00	
	1 large box.....	3 50	
			\$485 12
Samuel Forbert.....	Hauling 727 loads public documents.....	-----	363 50
Geo. & T. Parker & Co.....	2 dozen brooms, \$10; 80 pounds sperm candles, \$48.....	58 00	
	6 gold-band spittoons, \$18; 14 white ditto, \$28.....	46 00	
	40 boxes brown Windsor soap, 75 cents.....	30 00	
	80 pounds sperm candles, \$48; 100 pounds soap, 8 cents.....	56 00	
	2 dozen brooms, \$10; 41 boxes brown Windsor soap, at 75 cents	40 75	
	1 dozen house buckets, \$7 50; 100 pounds soap, \$8.....	15 50	
			246 25
L. J. Middleton.....	15 bushels ice, at 50 cents.....	7 50	

A. R. Parker.....	5 bushels daily, from March 6 to April 23, 42 days.....	105 00	139 50
James Cobean.....	9 bushels daily, from April 24 to April 30, 6 days.....	27 00	180 00
	Services as draughtsman on land maps, for April, 1861.....	-----	150 00
	Services in the office House of Representatives United States, for April, 1861.....	-----	
	Capitol police, pay-roll for April, 1861:		
A. K. Arnold.....	24th to 30th April, 7 days, as captain.....	17 53	
A. K. Arnold.....	1st to 23d April, 23 days.....	34 75	
Samuel Johnson.....	.....	45 83	
Wm. H. Thompson.....	.....	45 83	
James T. Ball.....	.....	45 83	
Fred. Fritz.....	.....	45 83	
Thomas C. Wells.....	.....	45 83	
John P. Hamlin.....	.....	45 83	
Francis Reilly.....	.....	45 83	
Michael French.....	.....	45 83	
James A. Wise.....	1st to 23d April.....	34 75	
James S. Magee.....	24th to 30th April.....	11 08	
John W. Crockwell.....	.....	45 83	
Thomas Proby.....	.....	45 83	
Charles C. Casey.....	1st to 24th April.....	36 26	
Thomas W. Phipps.....	25th to 30th April.....	9 56	
Benj. F. Beveridge.....	23d to 30th April.....	9 15	
	.....	45 83	
	Services as Capitol police, May 1st to May 3d, 1861, at \$1, 100 per annum, one-half paid by the Senate.....	611 38	
	Services as Capitol police, May 1 to May 2, 1861, 2 days, at \$1, 100 per annum, one-half paid by the Senate.....	4 03	
	Services as messenger in the south wing for April, 1861.....	2 52	
	Services in the bath room from March 5 to 31, 27 days, at \$1 50.....	1 25	
	Stationery.....	40 50	
	1 hand saw.....	11 32	
	2 handled axes.....	1 50	
	2 C. S. hammers.....	3 00	
	2 Screw drivers.....	2 00	
	2 C. S. hatchets.....	1 25	
	.....	1 50	
	Services as page in the hall of the House of Representatives from December 16, 1859, to March 9, 1860, 85 days, under resolution of March 2, 1861.....	9 25	
Frank C. Harris.....	.....	170 00	

A—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Alexander & Cooke.....	Binding the following documents:		
	16 volumes Smithsonian Report, 1859, at 12 cents.....	\$1 90	
	316 Agricultural Patent Report, 1859, at 12 cents.....	37 92	
	1,499 Finance Reports, 1860, at 12 cents.....	179 88	
	227 Mechanical Patent Reports, 1859, part 1, at 12 cents.....	27 24	
	9,979 Mechanical Patent Reports, 1859, part 2, at 12 cents.....	1,197 48	
	3,888 Message and Documents, 1860, part 1, at 12 cents.....	466 56	
	2,100 volumes Message and Documents, 1860-'61, part 2, at 12 cents.....	252 00	
	2,618 volumes Message and Documents, 1860-'61, part 3, at 12 cents.....	314 16	
	1,003 volumes Message and Documents, abridged, at 12 cents.....	120 36	
	150 volumes Pacific Railroad Reports, volume 12, part 1, at 85 cents.....	382 50	
	1,425 Pacific Railroad Reports, volume 12, part 2, at 85 cents.....	1,211 25	\$4,191 27
J. & R. Kingsland.....	The following map paper, viz:		
	32 pounds for 1,550 copies of Lieutenant Mullen's Military Road Map, at 17½ cents per pound.....	5 52	
	8,542 pounds for 20,000 copies of a portion of the maps of Major Delafield's Report on the Crimean war, 17½ cents per pound.....	1,439 00	1,439 52
J. D. B. Littell.....	Folder, pay-roll for May, 1861.....	100 00	
Samuel Phillips.....	do.....do.....	100 00	
H. H. Clark.....	do.....do.....	100 00	
J. J. Harrison.....	do.....do.....	77 50	
J. R. Zimmerman.....	do.....do.....	77 50	
A. H. Walcott.....	do.....do.....	77 50	
Zach. Brown.....	do.....do.....	62 00	
W. J. Harris.....	do.....do.....	62 00	
John Massey.....	do.....do.....	46 50	
			703 00
Ware Tappan.....	Folder, pay-roll for May, 1861.....	93 00	
H. B. Baxter.....	do.....do.....	93 00	
E. E. Coffin.....	do.....do.....	93 00	

N. C. Stone.....	do.....do.....do.....do.....	77 50	558 00
H. G. Divine.....	do.....do.....do.....do.....	77 50	280 64
L. D. Johnson.....	do.....do.....do.....do.....	77 50	100 00
Jno. T. Chancey.....	do.....do.....do.....do.....	46 50	46 50
Geo. W. Hoover.....	Services, folding documents from March 7, 1861, to May 31, 1861, at \$100 per month.	-----	46 50
E. H. Brink.....	Services, folding documents for May, 1861.....	-----	46 50
Ed. Burke.....	31 days' services in the office of the House of Representatives, as laborer, month of May, 1861.....	-----	-----
Isaac Entwisle.....	Services as laborer in House Library for May, 1861.....	125 00	-----
M. R. Shankland.....	Engineer, pay-roll, May, 1861.....	100 00	-----
D. A. McElhone.....	do.....do.....do.....do.....	100 00	-----
Joseph Mansfield.....	do.....do.....do.....do.....	62 00	-----
Sylvester Adams.....	do.....do.....do.....do.....	62 00	-----
Thomas Hunt.....	do.....do.....do.....do.....	62 00	-----
William Sanderson.....	do.....do.....do.....do.....	62 00	-----
William Mooney.....	do.....do.....do.....do.....	62 00	635 00
John Costin.....	Laborer, pay-roll for May, 1861.....	62 00	-----
Levi Neal.....	do.....do.....do.....do.....	46 50	-----
William Twine.....	do.....do.....do.....do.....	46 50	-----
W. H. Smith.....	do.....do.....do.....do.....	46 50	-----
R. Griffin.....	do.....do.....do.....do.....	26 00	-----
David Fisher.....	do.....do.....do.....do.....	46 50	-----
John Johnson.....	do.....do.....do.....do.....	46 50	-----
Lewis Saunders.....	do.....do.....do.....do.....	46 50	-----
E. Thomas.....	do.....do.....do.....do.....	46 50	413 50
P. B. Hayes.....	Use of two horses and wagons for March, April, and May, 1861, 92 days, at \$2 per day each.....	-----	368 00
Samuel Forbert.....	5 horses and wagons from April 1 to April 30, inclusive, at \$2 each per day.....	300 00	-----
	1 saddle horse for same time.....	45 00	-----
J. W. Jones.....	One horse and wagon from April 1 to May 31, 1861, at \$2 per day.....	-----	345 00
Alexander & Cooke.....	Binding documents, viz: 3,124 volumes Pacific Railroad Report, volume 12, part 2..... 472 volumes Pacific Railroad Report, volume 12, part 1..... 300 volumes Coast Survey Report, 1859.....	2,655 40 401 20 120 00	122 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Alexander & Cooke—Continued.....	2,823 volumes Commerce and Navigation, 1860, at 12 cents	\$338 96	
	1,273 volumes Message and Documents, abridged, 1860-'61	152 76	
	133 volumes Message and Documents, part 1, 1860-'61	15 96	
	141 volumes Message and Documents, part 2, 1860-'61	16 92	
	440 volumes Message and Documents, part 3, 1860-'61	52 80	
	384 volumes Finance Report, 1860-'61	46 08	
	52 volumes Mechanical Patent Reports, part 1, 1859	6 24	
	5,790 volumes Agricultural Patent Reports, part 1, 1859	694 80	
			\$4,500 92
J. B. Smith & Co	Fitting and lettering 800 volumes books in House Library, at 25 cents	-----	200 00
	Fitting and lettering 700 books in House Library, at 25 cents	-----	175 00
W. T. Dove	2 2-light pendants, \$2 25	4 50	
	1 day, gas fitter and assistant	4 00	
	1½ day, plumber and assistant	6 00	
	1 day, for mason	2 00	
	3 fittings, 75 cents; 2 sockets, 50 cents	1 25	
	6 hooks, 18 cents; 1 day for mason, \$2	2 18	
	1½ day, plumber and assistant	6 00	
	1 day, gas fitter, &c	4 00	
	150 feet 1-inch heavy hose, at 55 cents	52 50	
	4 pairs 1-inch coupling	4 00	
	Hose pipe and sprinkler	4 50	
	10 gallons best sperm oil	17 50	
	Can for same	1 00	
	Brass hinge and screws	25	
	½ day, plumber and assistant	2 00	
	½ day, gas fitter and assistant	2 00	
	1 flexible and fine shade	4 75	
	1 day, gas fitter and assistant	4 00	
	2 days, plumber and assistant	8 00	
	1 day, plumber and assistant	4 00	
			144 43

George H. Chapman	Temporary clerk, pay-roll for May, 1861	150 00
J. R. Briggs	do	150 00
William Averill	do	150 00
James Sheehy	Services in the office of the House of Representatives, for December and January, 1860-'61, at \$150 per month	450 00
A. R. Parker	Services as draughtsman, for May, 1861	300 00
R. Griffin	Washing 90 dozen towels, at 50 cents	180 00
William Fudge	Mail boy, pay-roll for May, 1861	45 00
A. G. Myers	do	75 00
William Hartough	do	75 00
J. B. Sheridan	Services as messenger in south wing of Capitol, for May, 1861	150 00
L. Clephane & Co.	Advertising in the "Sunday Morning Chronicle" list of appropriations and new offices created at 2d session 36th Congress	125 00
W. J. Mertaugh & Co.	Advertising in the "National Republican" list of appropriations and new offices created at 2d session 36th Congress	700 00
W. D. Wallach	Advertising in the "Republican Era" the list of appropriations and new offices created at 2d session 36th Congress	700 00
Gales & Seaton	Advertising in the "Evening Star" the list of appropriations and new offices created at the 2d session 36th Congress	700 00
N. Darling	Advertising in the "National Intelligencer" the list of appropriations and new offices created at 2d session 36th Congress	700 00
A. K. Arnold	Capitol police, pay-roll for May, 1861	700 00
J. J. Johnson	do	72 50
J. S. Magee	do	45 83
W. H. Thompson	do	45 83
F. Reilley	do	45 83
B. F. Beveridge	do	45 83
James A. Wise	do	45 83
J. N. Crockwell	do	45 83
C. C. Casey	do	45 83
S. C. Wailes	do	45 83
J. W. Westfall	do	45 83
J. B. Brown	do	43 32
D. A. Clayton	do	41 81
Thomas W. Phipps	do	31 23
	do	33 33

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Thomas C. Wells.....	Services as Capitol police, from May 1 to 10, inclusive, at \$1,100 per annum, one-half paid by the United States Senate.....	-----	\$15 10
Alexander Bruce.....	Washing 150 dozen towels for bath room, in April and May.....	-----	75 00
Alexander Bruce.....	Services in bath room, for May, 1861.....	-----	46 50
M. A. Carter.....	Use of room occupied by the Clerk's office of the House of Representatives, from April 19 to May 31, 42 days.....	-----	42 00
Alexander & Cooke.....	Binding the following documents, 1st session 36th Congress: 200 volumes Pacific Railroad Surveys, volume 12, part 1, at 85 cents..... 1,560 volumes Pacific Railroad Surveys, volume 12, part 2, at 85 cents..... 6,840 volumes Agricultural Patent Report, 1859, at 12 cents..... 14,419 volumes abstracted Indian trust bonds, at 12 cents.....	\$170 00 1,326 00 820 80 1,730 28	4,047 08 56 00 150 00 100 00 20 00
Elley Reynolds.....	56 buckets paste.....	-----	-----
Jos. Cobean.....	Services in the office of the House of Representatives, for May, 1861.....	-----	-----
S. A. Power.....	Services, folding documents, May, 1861.....	-----	-----
L. Hess.....	Services, folding documents, May 20 to 27.....	-----	-----
E. R. Jewett.....	Engraving 678 copper-faced illustrations of machinery, &c., to accompany the Report of the Commissioner of Patents on Arts and Manufactures, for the year 1860, at \$11 98 per illustration..... Deduct 6 per cent.....	8,122 44 487 35	7,635 09
W. Cock & Schade.....	For advertising in the "Metropole" the list of appropriations and new offices created at 2d session 36th Congress.....	-----	700 00
Gales & Seaton.....	For advertising in the "National Intelligencer" stationery advertisement..... Do.....do.....do.....proposals for fuel.....	53 00 6 75	59 75 41 00 41 00
J. B. Sheridan & Co.....	Advertising proposals for stationery in "Sunday Morning Chronicle".....	-----	700 00
W. Kock & Shade.....	Advertising proposals for stationery in the "Metropole".....	-----	225 00
J. C. Rives.....	Advertising the list of appropriations and new offices created at the 2d session 36th Congress in the "Daily Globe".....	-----	-----
J. B. Smith & Co.....	Binding documents, titling and lettering the following number of books for House library: 900 volumes, at 25 cents.....	-----	-----

W. T. Dove.....	Furnishing, repairing, &c. 1 dozen assorted files, \$4 50 ; 2 days, gas fitter and assistant, \$8..... 1 13-inch basin, \$2 ; 2 days, plumber and assistant, \$8..... 2 days, plumber and assistant, \$8 ; 2 days, plumber and assistant, \$8..... 2 days, plumber and assistant, \$8 ; 2 days, plumber and assistant, \$8..... 1 iron spanner, 75 cents ; 2 days, plumber and assistant, \$8..... 2 days gas fitter and assistant..... 1½ day, plumber and assistant, \$6 ; 2 days, gas fitter and assistant, \$8..... 1½ day, plumber and assistant, \$6 ; 2 days gas fitter and assistant, \$8..... 2 days, gas fitter and assistant, \$8 ; 2 days, gas fitter and assistant, \$8..... 2 spanners, \$1 50 ; 1 ream sand paper, \$4 25..... 1 day, gas fitter and assistant, \$4 ; 1 day, gas fitter and assistant, \$4..... 1½ day, gas fitter and assistant, \$6 ; 2 days, gas fitter and assistant, \$8..... 3 steel bit points, \$3 39 ; 2 days, gas fitter and assistant, \$8..... 2 barrels lime, \$2 75 ; 1 day, gas fitter and assistant, \$4..... 2 gallons best linseed oil, \$2 40 ; 1½ day, gas fitter and assistant, \$6..... 1½ day, gas fitter and assis't, \$6 ; 1½ day, gas fitter and assis't, \$5 ; 1 day, laborer, \$1 25.....	12 50 10 00 16 00 16 00 8 75 8 00 14 00 14 00 16 00 5 75 8 00 14 00 11 39 6 75 8 40 12 25
George W. Wooldridge.....	Work in folding-room, and for services in the office House of Representatives for May, 1861.....	188 59
L. Clephane.....	Advertising in the "National Republican" proposals for stationery..... Do.....do.....do.....proposals for wood and coal.....	100 00 51 00 6 00
Alexander & Cooke.....	Binding documents, viz : 2,010 volumes Agricultural Patent Office Report, 1859, 1st session 36th Congress..... 5,314 volumes abstracted Indian trust bonds, 2d session 36th Congress..... 6,680 volumes Report Commerce and Navigation, 1860, 2d session 36th Congress..... 695 volumes Coast Survey Report, 1859, 1st session 36th Congress..... 150 volumes Pacific Railroad, vol. 12, part 1, 1st session 36th Congress.....	241 20 637 68 801 60 278 00 127 50
Alexander & Cooke.....	Binding documents, viz : 16,000 volumes report select committee of five, seizing of forts, arsenals, &c , 2d session 36th Congress..... 2,000 volumes report on the condition of the banks in the United States, 1860, 2d session 36th Congress..... 238 volumes abstracted Indian trust bonds, 36th Congress. 2d session..... 253 volumes report on Commerce and Navigation, 1860, 2d session 36th Congress..... 1,698 volumes Coast Survey Report, 1859, 1st session 36th Congress.....	1,200 00 240 00 28 56 30 36 679 20
		2,085 98
		2,178 12

To whom paid.	For what object.	Amount.	Total.
John C. Rives	100 copies Congressional Globe and Appendix, 2d session 36th Congress, bound in law sheep, at \$4 90 per copy, for House library.....	-----	\$490 00
J. W. Angus.....	For furnishing committee rooms in south wing of the Capitol, repairing locks in rooms, including 26 packing boxes and trucks for folding-room.....	-----	105 68
H. W. Cosley.....	Services in the office of the House of Representatives from May 15 to June 14, 1860, 31 days	-----	46 50
Charles Lalin.....	10 M. adhesive post office envelopes.....	\$27 50	
	9 M. ....do.... N. G. envelopes.....	30 88	
	15 M. ....do.... government envelopes	67 50	
	9 M. ....do....do.....do.....	58 60	
	10 M. ....do....do.....do.....	70 00	
	5 M. adhesive blue post office envelopes.....	14 50	
	10 M. ....do.... N. G. envelopes.....	35 00	
	15 M. ....do.... government envelopes	60 00	
	5 M. ....do.... rose, 3 triple T. K. envelopes	15 00	
	5 M. ....do.... cream, 5 double T. K. envelopes.....	16 25	
	10 M. ....do.... ivory, 4 double T. K. envelopes.....	35 00	
	5 M. ....do.... ivory, 1 extra T. K. envelopes	12 50	
	15 M. ....do.... post office envelopes.....	52 50	
	10 M. ....do.... N. G. envelopes	32 50	
	15 M. ....do....do.....do.....	52 50	
	10 M. ....do....do.....do.....	40 00	
	5 M. ....do....do.... opaque envelopes.....	16 25	
	5 M. ....do....do....do.....do.....	17 50	
	5 M. ....do....do....do.....do.....	21 25	
	5 M. ....do.... assorted and colored envelopes.....	12 50	
	5 M. ....do....do....do.....do.....	13 50	
	5 M. ....do....do....do.....do.....	14 50	
	10 M. ....do.... government colored envelopes.....	75 00	
	5 M. ....do.... opaque.....do.....do.....	24 75	
	4 M. ....do.... N. Y. ....do.....do.....	1 62	

Charles Lalin.....	9 pen racks.....	3 00
	22 do.....	6 75
	5 gross penholders.....	15 00
	3 inkstands.....	6 75
	6 do.....	10 50
	7 do.....	10 50
	8 do.....	10 00
	8 do.....	8 00
	1 dozen mahogany rules.....	6 00
	1 dozen ebony rules.....	7 20
	1 dozen gutta-percha rules.....	7 80
	10 gross pens, per gross.....	7 50
	15 do do do.....	12 75
	4 scrap books.....	2 80
	4 do do.....	3 20
	11 do do.....	19 25
	12 do do.....	18 00
	9 do do.....	9 00
	4 do do.....	5 00
	4 do do.....	3 60
	3 blank books.....	2 70
	3 do do.....	2 40
	6 do do.....	3 60
	9 do do.....	3 60
	3 do do.....	2 10
	7 dozen De Taken & Co.'s thin ivory visiting cards, \$3 per dozen.....	21 00
	4 M. extra super cream wove envelopes, to match.....	11 00
	6 dozen boxes Vesta matches.....	4 68
	10 reams French buff laid note paper, ruled.....	30 00
	20 reams French white wove note paper, ruled and gilt.....	40 00
	20 reams French white wove note paper, plain and gilt.....	45 00
	15 reams French white wove note paper, ruled and gilt.....	37 50
	10 reams Bath post, ruled and gilt.....	35 00
	14 reams wove letter, ruled and gilt.....	52 50
	12 reams Congress laid, ruled and gilt.....	48 00
	10 reams cap Manila.....	50 00
	4 fancy paper weights.....	8 00
	6 fancy paper weights.....	9 00
	4 do.....	5 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Charles Lalin—Continued	10 fancy paper weights.....	\$10 00	
	9.....do	6 75	
	3.....do	1 80	
	4.....do	2 00	
			\$604 23
J. B. Smith & Co.....	Fitting and lettering the following books in House library, viz:		
	411 morocco titles and letters	102 75	
	318.....do.....do	79 50	
	295.....do.....do	73 75	
			256 00
Isaac Entwisle	Engineer, pay-roll for June, 1861	125 00	
M. R. Shankland	do.....do	100 00	
D. A. McElhone	do.....do	100 00	
Jos. Mansfield.....	do.....do	60 00	
Thos. Hunt	do.....do	60 00	
Sylvester Adams.....	do.....do	60 00	
Wm. Sanderson	do.....do	60 00	
Wm. Mooney	do.....do	60 00	
			625 00
John Costin	Laborer, pay-roll for June, 1861	60 00	
Levi Neal.....	do.....do	45 00	
Wm. Twine.....	do.....do	45 00	
W. H. Smith.....	do.....do	45 00	
Rinaldo Griffin	do.....do	45 00	
John Johnson	do.....do	45 00	
Lewis Saunders.....	do.....do	45 00	
David Fisher.....	do.....do	45 00	
Elle Thomas	do.....do	45 00	
			420 00
A. G. Myers	Mail-boy, pay-roll for June, 1861	75 00	
Wm. Tudge.....	do.....do	75 00	
			150 00

N. Darling.....	Capitol police, pay-roll for June, 1861.....	72 50	
A. K. Arnold.....	do.....	45 84	
J. A. Magee.....	do.....	45 84	
W. H. Thompson.....	do.....	45 84	
F. Reilly.....	do.....	45 84	
J. N. Crockwell.....	do.....	45 84	
S. J. Johnson.....	do.....	45 84	
B. F. Beveridge.....	do.....	45 84	
S. Wails.....	do.....	45 84	
C. C. Casey.....	do.....	45 84	
J. B. Brown.....	do.....	45 84	
D. A. Clayton.....	do.....	45 84	
J. A. Wise.....	do.....	45 84	
J. N. Westfall.....	do.....	45 84	
T. W. Phipps.....	do.....	33 33	
Geo. H. Chapman.....	Temporary clerk, pay-roll for June, 1861.....	150 00	701 75
Wm. Averill.....	do.....	150 00	
J. R. Briggs, jr.....	do.....	150 00	
Walter McMichael.....	Services in the office of House of Representatives, from May 3 to June 30, 1861.....	-----	450 00
J. D. B. Littell.....	Folder, pay-roll for June, 1861.....	100 00	291 76
Samuel Phillips.....	do.....	100 00	
H. H. Clark.....	do.....	100 00	
J. R. Zimmerman.....	do.....	75 00	
I. J. Harrison.....	do.....	75 00	
A. H. Walcott.....	do.....	75 00	
Z. Brown.....	do.....	60 00	
W. J. Harris.....	do.....	60 00	
John Massey.....	do.....	45 00	
Samuel Perley.....	Services in the document room for May and June, 1861.....	-----	690 00
Geo. B. Wooldridge.....	Services in the folding room for June, 1861.....	-----	200 00
G. W. Hoover.....	Services in the document room for June, 1861.....	-----	100 00
E. H. Brink.....	do.....	-----	100 00
S. A. Power.....	Services in the office of House of Representatives, folding documents, for June, 1861.....	-----	100 00
N. A. Groves.....	Services in the folding room of House of Representatives of the United States, from June 9 to June 30, 1861.....	-----	55 00
W. T. Evans.....	Services rendered in House library for June, 1861.....	-----	45 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Edward Burke	Services in the office folding documents, for June, 1861.....	-----	\$45 00
W. Hartough	Services as messenger in south wing of Capitol, 1861.....	-----	125 00
Henry Schreiner.....	Temporary mail boy, pay-roll, from June 4 to July 3, 1861.....	\$50 00	
J. A. Renshaw.....	do.....do.....	50 00	
F. H. Williams.....	12 dozen towels.....	48 00	100 00
	Hemming, washing, marking, looping, tape, and 2 bottles marking ink.....	23 75	
Alexander Bruce.....	Services in bath-room for June, 1861.....	-----	71 75
	Washing 48½ dozen towels.....	-----	45 00
P. B. Hayes.....	Use of two horses and wagon for June, 1861	-----	24 25
Lawrence Cohane.....	Painting, repairing, cleaning, and kalsoming walls and rooms in the south wing of the Capitol—	-----	60 00
	First floor: Halls, passages and lobbies, committee rooms on Elections, Post Office and Post Roads, room No. 6. Second floor: Halls, passages, lobbies, committee rooms Military Affairs, two rooms Ways and Means, room of Sergeant-at-Arms, members' retiring rooms, clerks' offices, and committee room of Naval Affairs. Third floor: Halls, passages and lobbies, committee rooms Roads and Canals, District of Columbia, Foreign Affairs, two rooms Commerce and Public Lands, telegraph rooms and reporters' rooms.....	989 00	
	Cleaning and painting in oil walls and woodwork in Speaker's rooms, reception rooms, water closets, Committee on Accounts, hall of the House of Representatives, water closets on first floor, retiring rooms, lobbies adjoining hall, painting woodwork in Post Office and Post Roads committee room, around doors in hall of the house, walls and niches.....	650 00	
	Removing and inserting 18 panes glass 13 by 19; inserting 4 large panes of plate glass	80 00	
	Painting over red and repainting in fresco (drab) all the panels in the hall of the house; painting over, repainting in fresco, (drab,) mending and repairing pannels and niches in the galleries of the House of Representatives.....	950 00	
	Rubbing with pumice and freestone and cleaning 260 treads and rises and platforms of the marble stairways throughout the south wing of the Capitol.....	650 00	

Taking up old carpet from the hall of House of Representatives, different committee rooms; removing, shaking and cleaning them.....	195 00
Scrubbing and cleaning floor of hall, lobby rooms; cleaning paint in hall, passages, &c., &c.....	175 00
Cleaning with pumice and freestone the steps and marble work of Speaker's room, entrances to the hall and door-sills in the passages and different committee rooms; cleaning marble mantles in members', retiring, ladies', waiting, clerks', Speaker's and Committee of Ways and Means rooms.....	60 00
Cleaning and varnishing 250 desks for hall of House of Representatives.....	625 00
Repairing hall desks.....	50 00
Cleaning and varnishing in lobbies of hall of House of Representatives and in the different committee rooms throughout south wing of the Capitol—	
185 chairs.....	92 50
28 large book-cases.....	56 00
32 writing desks.....	32 00
17 hat-racks with stands.....	17 00
3 map-racks with rollers.....	6 00
2 small clocks.....	1 00
36 washstands.....	36 00
64 sofas and lounges.....	64 00
1 hall clock.....	2 00
Wood work around Speaker's, clerks' and reporters' desks, hall of House of Representatives.....	2 50
Doorways and base covers around hall.....	12 00
4 screens in hall.....	2 00
72 mahogany top rails in seat backs in galleries.....	36 00
Removing from old to new hall pictures of Washington and Lafayette.....	35 00
Varnishing one seal box, clerks' office.....	1 00
Varnishing counter and railing in clerks' office and Sergeant-at-Arms office.....	8 00
Cleaning, repairing, and putting on casters on 30 sofas and lounges and 46 casters in lobbies and different committee rooms.....	106 00
	4,933 00
J. B. Smith & Co.....	
Binding the following documents, 2d session 36th Congress, in sheep, viz:	
255 copies House Journal, at 50 cents, members.....	127 50
4.....do.....do.....do.....United States mint.....	2 00
2.....do.....do.....do.....Congressional library.....	1 00
2.....do.....do.....do.....Court of Claims.....	1 00
1.....do.....do.....do.....Military Academy.....	50
1.....do.....do.....do.....Naval Academy.....	50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. B. Smith & Co—Continued.....	Binding the following documents, 2d session 36th Congress, in calf, viz: 42 copies House Journal, at 61 cents, House library..... 28.....do.....do.....Secretary..... 10.....do.....do.....office House of Representatives..... Fitting and lettering the following books in library House of Rep., viz: 402 volumes, at 25 cents..... 260.....do.....do..... 29 2-quire crown blank books..... 58 quires printing, at 50 cents per quire..... 10 3 quire crown blank books, at \$2 25..... 1 5-quire crown blank book, \$3 75; 29 morocco side tables, \$8 70..... 1 6-quire regulation, pay, and mileage book..... 1 6-quire diary book..... 2 side letterings..... 1 6-quire royal ledger for folding room..... 3 days' work ruling cross lines by hand, at \$2 33 per day.....	\$25 62 17 08 6 10 100 25 65 00 43 50 29 00 22 50 12 45 18 00 18 00 1 50 18 00 7 00	\$516 75 5,553 00 600 00 932 40 253 50
G. W. Alexander	Binding 9,255 volumes Congressional Globe and Appendix, 2d session 36th Congress, for 24 copies to each member and delegate, at 60 cents.....	225 60	
Charles Lalin	250 reams Manila paper, 19 by 24, at \$2 40 per ream.....	232 80	
G. W. Alexander.....	Binding Congressional Globe, 1st session 36th Congress: 376 copies, part 1, at 60 cents..... 388 copies, part 2, at 60 cents..... 396 copies, part 3, at 60 cents..... 394 copies, part 4, at 60 cents.....	237 60 236 40	
G. N. Beale.....	Use of workman for the House of Representatives, from August 15, 1860, to January 31, 1861, at \$1 50 per day, 169 days.....		932 40
L. Cohane	2 silk flags, eagle, shield, and two spear-head flag staffs..... 1 large American flag for Capitol..... Cloth, silver-head nails, stripping and re-covering 30 doors with drab, and 8 doors, &c., with green cloth.....	87 00 60 00 550 00	253 50

For new damask, and covering screens for hall of House of Representatives	20 00
Covering with Tarleton the looking-glasses and cornices of Speaker's, Clerk's, Sergeant-at-Arms', retiring, and folding rooms.....	60 00
Covering 13 desks in hall of House of Representatives with green cloth.....	13 00
Repairing cloth on 15 desks	7 50
Covering 2 small tables in committee room on Commerce.....	6 00
Covering with cloth desks in telegraphic and reporter's rooms.....	12 00
Covering 1 single table in room of Post Office and Post Roads committee.....	15 00
Covering with enameled cloth 1 table in folding room	6 00
Railing for counter in Sergeant-at-Arms' room, covered with green silk, 6¾ yards....	12 00
25 yards cotton cloth for engineer's room.....	3 12
55 pounds white lead and 2 gallons oil	8 60
Washing and cleaning 250 large chairs in hall.....	50 00
14 dozen brass bolts and knobs.....	12 00
Draping and dressing south wing of the Capitol for Judge Douglas	60 00
2 large ice coolers	20 00
2 silver-plated pitchers for Speaker's and Clerk's rooms	24 00
6 combs and 150 brushes.....	58 16
50 dozen tumblers, at \$2 50 per dozen	125 00
50 water pitchers.....	25 00
Furnishing materials and facing new damask curtains, filled with hair, in the galleries..	1, 600 00
2, 834 38	
L. Cohane	
300 extra large size superfine cane-seat arm chairs for hall of representatives	1, 500 00
12 extra large cane-seat oak sigament back settees for hall of representatives	420 00
2 extra large revolving chairs, oval backs, for use of Speaker and Clerk	50 00
1,680 yards matting for Clerk's office, Speaker's room, and room of Committee of Ways and Means, at 29 cents.....	487 20
Laying same	168 00
1,308 yards binding for same, and laying	156 96
43 window shades in second story	176 00
953 yards carpeting for galleries of hall, at 85 cents.....	810 05
Laying carpet.....	195 00
New damask and new backs to seats and divans	584 00
750 yards fine gimp	45 00
50 yards cocoa matting, at 80 cents	40 00
Covering with linen in lobbies of hall of representatives and committee rooms, 38 lounges and sofas, 60 chairs, and 5 stools.....	207 35
120 yards oil-cloth, and laying it at doors of hall, galleries, offices, and com. rooms..	160 00

4, 999 56

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Ben. Foster	Services as messenger from July 1 to July 8, 1861, at \$1,500.....	.....	\$32 61
M. F. Odell	Newspapers.....	.....	50 00
C. A. Wickliffe.....	do.....	.....	50 00
Robert Mallory.....	do.....	.....	50 00
J. N. Goodwin	do.....	.....	50 00
G. A. Grow	do.....	.....	50 00
F. A. Pike.....	do.....	.....	50 00
Henry Grider	do.....	.....	50 00
J. W. Reid.....	do.....	.....	50 00
E. H. Norton	do.....	.....	50 00
J. S. Jackson	do.....	.....	50 00
S. T. Worcester	do.....	.....	50 00
J. W. Menzies	do.....	.....	50 00
J. B. Steele.....	do.....	.....	50 00
Samuel Shellabarger	do.....	.....	50 00
Fernando C. Beaman	do.....	.....	50 00
Wm. Kellogg	do.....	.....	50 00
R. E. Trowbridge.....	do.....	.....	50 00
Wm. P. Cutler	do.....	.....	50 00
J. Buffinton.....	do.....	.....	50 00
B. Van Horn.....	do.....	.....	50 00
G. W. Dunlap.....	do.....	.....	50 00
Ed. McPherson.....	do.....	.....	50 00
Wm. Vandever.....	do.....	.....	50 00
A. W. Clarke	do.....	.....	50 00
Charles Delano.....	do.....	.....	50 00
J. Hutchins.....	do.....	.....	50 00
J. W. Wallace	do.....	.....	50 00
Ed. Haight	do.....	.....	50 00
J. H. Campbell.....	do.....	.....	50 00
M. F. Conway.....	do.....	.....	50 00
W. A. Wheeler.....	do.....	.....	50 00

S. G. Daily	do	50 00
John Hickman	do	50 00
A. G. Riddle	do	50 00
J. T. Hale	do	50 00
G. T. Cobb	do	50 00
A. G. Porter	do	50 00
William Allen	do	50 00
Sidney Edgerton	do	50 00
J. A. Gurley	do	50 00
Wm. E. Lehman	do	50 00
Philip Johnson	do	50 00
A. Scott Sloan	do	50 00
B. F. Granger	do	50 00
Alfred Ely	do	50 00
K. V. Whaley	do	50 00
W. E. Lansing	do	50 00
Nehemiah Perry	do	50 00
R. H. Duell	do	50 00
S. E. Ancona	do	50 00
G. C. Woodruff	do	50 00
S. S. Cox	do	50 00
C. Aldrich	do	50 00
W. G. Steele	do	50 00
J. W. Killinger	do	50 00
Benjamin Wood	do	50 00
W. P. Noble	do	50 00
H. G. Blake	do	50 00
E. G. Spaulding	do	50 00
Owen Lovejoy	do	50 00
W. Mitchell	do	50 00
Geo. H. Pendleton	do	50 00
J. W. Noell	do	50 00
Luther Hanchett	do	50 00
Frederick A. Conkling	do	50 00
Theodore A. Pomeroy	do	50 00
John A. Bingham	do	50 00
Alexander H. Rice	do	50 00
C. L. Vallandigham	do	50 00
Roscoe Conkling	do	50 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Alexander S. Diven.....	Newspapers.....	-----	\$50 00
S. C. Fessenden.....	do.....	-----	50 00
G. P. Fisher.....	do.....	-----	50 00
Aug. Frank.....	do.....	-----	50 00
C. H. Upton.....	do.....	-----	50 00
B. Franchot.....	do.....	-----	50 00
Chauncey Vibbard.....	do.....	-----	50 00
Aaron Harding.....	do.....	-----	50 00
Francis P. Blair.....	do.....	-----	50 00
J. P. Chamberlain.....	do.....	-----	50 00
Stephen Baker.....	do.....	-----	50 00
Wm. M. Davis.....	do.....	-----	50 00
J. L. N. Stratton.....	do.....	-----	50 00
V. B. Horton.....	do.....	-----	50 00
J. A. Cravens.....	do.....	-----	50 00
J. T. Nixon.....	do.....	-----	50 00
C. A. White.....	do.....	-----	50 00
R. A. Harrison.....	do.....	-----	50 00
A. P. Morrill.....	do.....	-----	50 00
J. H. Rice.....	do.....	-----	50 00
B. F. Thomas.....	do.....	-----	50 00
P. Baxter.....	do.....	-----	50 00
J. S. Rollins.....	do.....	-----	50 00
H. B. Wright.....	do.....	-----	50 00
J. M. Ashley.....	do.....	-----	50 00
H. C. Burnett.....	do.....	-----	50 00
E. P. Walton.....	do.....	-----	50 00
F. W. Kellogg.....	do.....	-----	50 00
W. H. Wadsworth.....	do.....	-----	50 00
Henry L. Dawes.....	do.....	-----	50 00
C. W. Walton.....	do.....	-----	50 00
J. B. Alley.....	do.....	-----	50 00

W. S. Holman	do	50 00
B. B. Van Valkenburgh	do	48 50
R. E. Fenton	do	48 25
Edward H. Smith	do	44 00
T. B. Cooper	do	44 00
A. J. Thayer	do	44 00
J. C. Delaplaine	do	38 00
Francis Thomas	do	24 50
J. B. Steele	Stationery	4 63
E. H. Smith	do	5 44
F. P. Blair	do	10 00
A. S. Diven	do	10 93
R. B. Van Valkenburgh	do	12 39
R. E. Trowbridge	do	12 66
H. B. Wright	do	15 18
Alfred Ely	do	16 11
B. Van Horn	do	16 47
Wm. Mitchell	do	17 12
B. F. Granger	do	17 19
F. W. Kellogg	do	17 95
W. P. Noble	do	18 17
Aaron Harding	do	18 39
J. H. Rice	do	18 72
W. T. Holman	do	18 77
Ambrose W. Clark	do	18 94
F. C. Beaman	do	19 24
V. B. Horton	do	19 48
Richard Franchot	do	19 87
Jas. T. Hale	do	19 93
W. A. Wheeler	do	20 05
S. Shellabarger	do	20 17
Stephen Baker	do	20 29
A. G. Riddle	do	20 32
W. E. Lehman	do	20 55
R. E. Fenton	do	20 61
J. T. Nixon	do	21 07
W. Kellogg	do	21 33
S. C. Fessenden	do	21 37
B. Wood	do	21 44

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. L. N. Stratton.....	Stationery.....	.....	\$21 55
J. A. Cravens.....	do.....	.....	21 60
Henry Grider.....	do.....	.....	21 74
J. H. Campbell.....	do.....	.....	21 86
J. Hutchins.....	do.....	.....	21 87
C. A. White.....	do.....	.....	21 89
F. A. Conkling.....	do.....	.....	21 94
S. T. Worcester.....	do.....	.....	21 95
J. B. Alley.....	do.....	.....	21 96
R. A. Harrison.....	do.....	.....	22 35
G. P. Fisher.....	do.....	.....	22 40
Theo. M. Pomeroy.....	do.....	.....	22 49
R. H. Duell.....	do.....	.....	22 55
William M. Davis.....	do.....	.....	22 66
J. S. Robbins.....	do.....	.....	22 85
W. P. Cutter.....	do.....	.....	22 90
C. H. Upton.....	do.....	.....	22 97
E. McPherson.....	do.....	.....	23 04
G. W. Dunlop.....	do.....	.....	23 30
H. C. Burnett.....	do.....	.....	23 32
G. C. Woodruff.....	do.....	.....	23 41
H. L. Dawes.....	do.....	.....	23 45
J. S. Jackson.....	do.....	.....	23 49
J. N. Goodwin.....	do.....	.....	23 51
F. A. Pike.....	do.....	.....	23 53
Aug. Frank.....	do.....	.....	23 54
S. S. Cox.....	do.....	.....	23 77
J. P. Chamberlain.....	do.....	.....	23 81
C. Aldrich.....	do.....	.....	23 95
B. F. Thomas.....	do.....	.....	23 97
G. H. Pendleton.....	do.....	.....	24 05
Owen Lovejoy.....	do.....	.....	24 11

A. G. Porter.....	do	24 14
W. G. Steele.....	do	24 20
C. A. Wickliffe.....	do	24 34
C. W. Walton.....	do	24 37
Alexander H. Rice.....	do	24 37
Portus Baxter.....	do	24 42
Sidney Edgerton.....	do	24 55
J. Buffinton.....	do	24 56
J. W. Reid.....	do	24 57
J. M. Noell.....	do	24 57
G. T. Cobb.....	do	24 60
Francis Thomas.....	do	24 62
C. W. Delano.....	do	24 65
C. Vibbard.....	do	24 68
H. G. Blake.....	do	24 69
J. M. Ashley.....	do	24 73
M. F. Conway.....	do	24 78
E. H. Norton.....	do	24 81
W. H. Wadsworth.....	do	24 82
S. G. Daily.....	do	24 82
A. P. Morrill.....	do	24 87
J. W. Wallace.....	do	24 90
Robert Mallory.....	do	25 00
G. A. Grow.....	do	25 00
J. W. Menzies.....	do	25 00
W. Vandever.....	do	25 00
R. Conkling.....	do	25 00
C. L. Vallandigham.....	do	25 00
J. A. Bingham.....	do	25 00
E. G. Spaulding.....	do	25 00
J. W. Killinger.....	do	25 00
W. Allen.....	do	25 00
John Hickman.....	do	25 00
Ed. Haight.....	do	25 00
C. M. Keys.....	550 tons white ash furnace coal, at \$4 79 per ton.	\$2,634 50
	100 cords spruce pine wood, at \$3 89.....	389 00
Isaac Entwisle.....	Services as engineer in the furnace room of House of Representatives from July 1 to 17, 1861, at \$1,500.....	3,023 50
		69 24

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Charles Hawke.....	25 days' work painting in engineer's room, at \$1 75 per day.....	-----	\$43 75
Thomas Noone.....	18 days' work whitewashing in engineer's room, at \$1 50.....	-----	27 00
George Marston.....	Use of 1 horse and wagon from March 5 to July 5, 1861, 123 days.....	-----	246 00
George Marston.....	Use of two saddle horses for one month after and one month before the session of Congress, at \$1 50 each per day, 61 days, from March 5 to April 4, and from June 4 to July 3, 1861.....	-----	183 00
Stillman Moores.....	Services in the folding room from March 5 to June 30, 118 days, at \$3 per day.....	-----	354 00
I. J. Harrison.....	Services, folding documents, from July 1 to 15, 1861, at \$2 50.....	-----	37 50
Alexander & Cooke.....	Binding documents, viz: 226 vols. Coast Survey, 1859, at 40 cents.....	\$90 40	
	21,158 vols. Agricultural Patent Office Report, 1860.....	2,538 96	
	4,940 vols. Mechanical Patent Reports, 1860.....	592 80	
Augustus Potts.....	Page, pay-roll from July 4 to 8, 1861.....	10 00	3,222 16
J. C. Tompkins.....	do.....do.....do.....	10 00	
W. M. Phipps.....	do.....do.....do.....	10 00	
T. F. Jewell.....	do.....do.....do.....	10 00	
W. A. Linton.....	do.....do.....do.....	10 00	
I. L. Coombs.....	do.....do.....do.....	10 00	
M. E. Hall.....	do.....do.....do.....	10 00	
O. D. Ambrose.....	do.....do.....do.....	10 00	
Willie Dunn.....	do.....do.....do.....	10 00	
W. C. Harte.....	do.....do.....do.....	10 00	100 00
Harrison Brothers.....	5 dozen assorted 6-blade knives, at \$30.....	150 00	
	10.....do.....3 and 4 blade knives, at \$15.....	150 00	
	4.....do.....1 and 2 blade knives, at \$6.....	24 00	
	4.....do.....2-blade knives, at \$15.....	45 00	
W. S. King.....	2,000 directions for House of Representatives, 1st session 37th Congress.....	-----	369 00
Weare Tappan.....	Folding documents, pay-roll for June, 1861.....	90 00	80 00
H. B. Baxter.....	do.....do.....do.....	90 00	

E. E. Coffin.....	do.....do.....	90 00	540 00
N. C. Stone.....	do.....do.....	75 00	70 00
H. G. Divine.....	do.....do.....	75 00	58 70
L. D. Johnson.....	do.....do.....	75 00	22 50
J. T. Chauncey.....	do.....do.....	45 00	22 50
			60 67
E. Reynolds.....	70 buckets of paste.....		
M. R. Shanklan.....	Assistant engineer from July 1 to 16, 1861, at \$1,200.....		
W. A. Groves.....	Folding documents from March 4 to 13, at \$2 50, 9 days.....		
T. W. Phipps.....	do.....do.....do.....		
L. Clephane.....	Excess of postage on packages to members of the House of Representatives.....		
F. H. Williams.....	5 dozen towels.....	20 00	
	2.....do.....	12 00	
	Washing 7 dozen towels.....	5 25	
	Hemming 7 dozen.....do.....	5 25	
	Marking, looping, and tape.....	3 00	
	2 bottles indelible ink.....	75	
Samuel Turbot.....	Cartage of 120 loads of documents in June, 1861.....		46 25
J. B. Smith & Co.....	Binding the following documents, 2d session 36th Congress, in sheep, viz:		61 00
	67 vols. House Journal, at 50 cents, executive departments.....	33 50	
	23.....do.....do.....do.....for legations.....	11 50	
	78.....do.....do.....do.....senators.....	39 00	
	470.....do.....do.....do.....Interior Department.....	235 00	
	40.....do.....do.....do.....State Department.....	20 00	
	Lettering 209 books, at 25 cents.....	52 25	
	Do.....160 Manuals, at 25 cents.....	40 00	
C. B. Sedgwick.....	Newspapers.....		431 25
J. E. Kerrigan.....	do.....		50 00
T. D. Eliot.....	do.....		50 00
W. A. Richardson.....	do.....		50 00
John Law.....	do.....		50 00
Jos. Bailey.....	do.....		50 00
C. A. Trimble.....	do.....		50 00
William Appleton.....	do.....		50 00
Robert McKnight.....	do.....		50 00
E. H. Webster.....	do.....		50 00
J. J. Crittenden.....	do.....		50 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. D. Kelly.....	Newspapers.....	-----	\$50 00
E. B. Washburne.....	do.....	-----	50 00
P. B. Fouke.....	do.....	-----	50 00
A. B. Olin.....	do.....	-----	50 00
John Covode.....	do.....	-----	50 00
C. B. Train.....	do.....	-----	50 00
J. C. Robinson.....	do.....	-----	50 00
G. H. Brown.....	do.....	-----	50 00
E. Corning.....	do.....	-----	50 00
S. N. Sherman.....	do.....	-----	50 00
D. W. Gooch.....	do.....	-----	50 00
C. L. L. Leary.....	do.....	-----	50 00
E. Ward.....	do.....	-----	50 00
E. Babbitt.....	do.....	-----	50 00
S. R. Curtis.....	do.....	-----	50 00
Isaac N. Arnold.....	do.....	-----	50 00
Thad. Stevens.....	do.....	-----	50 00
G. F. Bailey.....	do.....	-----	50 00
William Wall.....	do.....	-----	50 00
J. P. Verree.....	do.....	-----	50 00
B. H. Nugent.....	do.....	-----	50 00
William Windom.....	do.....	-----	50 00
W. G. Brown.....	do.....	-----	27 00
J. R. Morris.....	do.....	-----	43 50
Jesse Lazear.....	do.....	-----	45 50
A. T. White.....	do.....	-----	48 20
W. E. Lansing.....	Stationery.....	-----	4 53
A. S. Sloan.....	do.....	-----	10 81
William Appleton.....	do.....	-----	15 04
J. V. Morris.....	do.....	-----	17 97
William A. Richardson.....	do.....	-----	17 85
G. H. Brown.....	do.....	-----	18 10

William Wall	do	18 45
J. C. Robinson	do	18 63
A. B. Olin	do	19 03
E. Ward	do	19 09
D. W. Gooch	do	19 10
J. J. Crittenden	do	20 10
P. B. Fouke	do	20 18
Jos. Bailey	do	20 48
S. N. Sherman	do	21 65
W. G. Brown	do	21 84
J. A. Gurley	do	21 92
Thad. Stevens	do	21 99
John Law	do	22 28
Jesse Lazear	do	22 35
T. B. Cooper	do	22 40
John Covode	do	22 58
R. H. Nugent	do	22 69
S. R. Curtis	do	22 69
Thomas D. Eliot	do	22 86
S. E. Ancona	do	22 88
William Windom	do	23 17
Philip Johnson	do	23 47
J. P. Verree	do	23 70
A. S. White	do	24 07
C. B. Sedgwick	do	24 07
G. F. Bailey	do	24 26
C. F. Trimble	do	24 36
Charles R. Train	do	24 43
Robert McKnight	do	24 54
E. H. Webster	do	24 62
E. Corning	do	24 62
C. L. L. Leary	do	24 73
Isaac C. Delaplaine	do	16 85
Elijah Babbitt	do	25 00
James E. Kerrigan	do	25 00
E. B. Washburne	do	24 07
Nehemiah Perry	do	19 43
Dwight Loomis	Newspapers	50 00
S. Colfax	do	43 80

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
S. Colfax	Newspapers.....	.....	\$19 02
W. T. Dove	1½ day, gas fitter and assistant.....	\$6 00	
	1 pair brass hinges, 31 cents; 1 day, plumber and assistant, \$4.....	4 31	
	2 days, gas fitter and assistant	8 00	
	Plaster of paris, 25 cents; 1 day, plumber and assistant, \$4; 1½ day, gas fitter and assistant, \$6	10 25	
	6 iron hooks and braces, 2 iron plates and iron rod	3 00	
	1 14-inch basin, \$2 75; putty, 6 cents; 3 plated plugs, \$5 25	8 06	
	4 feet plated chain, \$1; 1 day, plumber and assistant, \$4; 1½ day, gas fitter and assistant, \$6	11 00	
	2 gallons alcohol, \$1 60; 1 gallon can, 75 cents; copper wash, 40 cents	2 75	
	1½ gallon turpentine, \$2 04; 1 day, plumber and assistant, \$4.....	6 04	
	1 14-inch basin, \$2 75; 1 day, plumber and assistant, \$4; ½ day, gas fitter and assistant, \$1	7 75	
	Plaster of paris, 25 cents; 1 day, gas fitter and assistant, \$4.....	4 25	
	1 brass plate, 75 cents; 5 pounds lamp wick, \$1 85	2 60	
	2 bundles laths, 60 cents; 1 gas fitter and assistant, \$4.....	4 60	
	Repairing plated cock, 50 cents; 1 day, gas fitter and assistant, \$4.....	4 50	
	2 watering pots, \$2; 2 barrels lime, \$3.....	5 00	
	½ day, gas fitter and assistant.....	2 00	
	2 brass oil pans, \$13 50; 20 pounds red lead, \$2 20	15 70	
	25 pounds white lead, \$3 25; ¾ day, gas fitter and assistant, \$3.....	6 25	
	4 blind caps, 48 cents; 1 day, gas fitter and assistant, \$4	4 48	
	5 globe holders, \$1 25; ½ day, gas fitter and assistant, \$2.....	3 25	
	8 iron braces.....	2 50	
	28 days, steam fitter, at \$2 50.....	70 00	
	½ day, gas fitter and assistant.....	2 00	
	10 pounds glue, \$4; 1 day, gas fitter and assistant, \$4.....	8 00	
	2 days, plumber and assistant.....	8 00	
	6 blind caps, 72 cents; 2 days, gas fitter and assistant, \$8.....	8 72	
	20 pounds Venetian red, \$2 20; 1 iron plate, 75 cents	2 95	
	75 pounds lead pipe, \$9; 1 ½ composition bibb, \$3	12 00	

Wm. W. Ellis & Brother.....	Wooden box for water-cooler	4 50	267 86
	Finishing for same	2 50	
	1 day, plumber and assistant	4 00	
	15 pounds lead pipe, \$1 80; brass hinge, 25 cents	2 05	
	4 feet brass chain, 48 cents; 1½ foot plated chain, 37 cents	85	
	2 days, plumber and assistant, \$8; 2 days, gas fitter and assistant, \$8	16 00	
	1 gland for steam-engine, 4 pounds, at 4 cents	16	
	Machinist to fit same, 6 hours, at 35 cents	2 10	
	60 grate bars, 1,836 pounds, at 3½ cents	64 05	
J. D. Ward	Services in the old hall of House of Representatives, from March 5, 1861, to June 10, 1861, at \$3 per day, 98 days		66 31
J. D. Ward	Services in the old hall of House of Representatives, from June 11, 1861, to July 22, 1861, 42 days		294 00
J. J. Evans	Page, from February 8 to March 9, 1860, resolution of March 2, 1861, 30 days, at \$2		126 00
John A. Logan	Newspapers		60 00
T. M. Edwards	do		50 00
J. F. Potter	do		50 00
J. K. Morehead	do		50 00
T. M. Edwards	Stationery		50 00
John F. Potter	do		23 50
John A. Logan	do		22 34
J. K. Morehead	do		21 19
John Patton	do		20 55
P. Barry Hayes	Use of 2 horses and carriages, from July 1 to July 4, 1861, 4 days		14 05
John Patton	Newspapers		12 00
Alexander & Cooke	Binding documents, viz: 14,668 volumes Patent Office Report, (Agricultural,) 1860	1,762 56	50 00
	8,900 volumes Patent Office Report, (Mechanical,) 1860	1,068 00	50 00
	Newspapers		50 00
W. M. Dunn	do		50 00
G. W. Julian	do		50 00
J. P. C. Shanks	do		50 00
Dan'l W. Voorhees	do		50 00
Wm. P. Sheffield	do		50 00
K. V. Whaley	Stationery		6 09
W. P. Sheffield	do		17 94
M. F. Odell	do		20 62

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
D. W. Voorhees	Stationery	-----	\$22 55
W. McK. Dunn	do	-----	22 81
J. P. C. Shanks	do	-----	23 71
G. W. Julian	do	-----	24 87
W. D. Kelly	do	-----	24 95
J. S. Morton	Compensation, contesting the seat of Samuel G. Daily as a delegate from Nebraska, from March 4 to July 25, 1861	\$1, 180 40	
	Mileage allowed by the Committee on Mileage, (see resolution of House of Representatives of July 26, 1861)	1, 508 00	2, 688 40
Daniel Buck	Collating, correcting, and preparing for publication the list of appropriations made and new offices created, &c., 2d session 36th Congress, (resolution of House of Representatives of March 3, 1857)	-----	360 00
J. C. Walker	Compensation as reading clerk under the resolution of March 3, 1857, from March 1 to August 1, 1861, at \$3 60 per annum	-----	150 00
W. Jay Ketchum	Winding the clocks from March to June, 4 months	80 00	
	Repairing clock in doorkeeper's room	6 00	
	Repairing clock in chief clerk's room	7 00	
	Repairing clock in room No. 58	7 00	
	Repairing clock in room of Committee on Patents	5 00	
Coyle & Brother	1,614 feet $\frac{3}{4}$ culls, 1 $\frac{1}{4}$	-----	105 00
Amanda Griffin	Washing 32 $\frac{1}{2}$ dozen towels, at 50 cents	-----	28 24
J. Shillington	7 dies for stamping books	-----	16 25
Wm. Hastings	Services from July 1 to July 12, 1861, at \$1,500 per annum	-----	14 00
G. B. Wooldridge	Services in folding documents for month of July, 1861	-----	48 91
Jessup & Moore	200 reams 27 by 37 Manilla paper	-----	100 00
W. A. Groves	Folding documents from March 4 to March 13, 1861, 9 days, at \$2 50	-----	670 00
J. A. Bowen	do	-----	22 50
James Bryan	Folding documents from January 16 to January 24, at \$2 50 per day	-----	22 50
Henry May	Newspapers	-----	20 00
C. H. Van Wyck	do	-----	50 00
		-----	50 00

J. A. McClernand	do		50 00
J. E. English	do		50 00
C. H. Van Wyck	Stationery		24 93
J. A. McClernand	do		18 44
N. Darling	Capitol police, pay-roll for July, 1861	72 50	
A. K. Arnold	do	45 83	
S. J. Johnson	do	45 83	
Wm. H. Thompson	do	45 83	
B. F. Beveridge	do	45 83	
C. C. Casey	do	45 83	
S. C. Wailes	do	45 83	
J. A. Wise	do	45 83	
J. W. Westfall	do	45 83	
D. A. Clayton	do	45 83	
J. B. Brown	do	45 83	
J. A. Magee	do	45 83	
Geo. H. Garrett	do	45 83	
John Vanderhyden	do	45 83	
F. W. Phipps	do	33 33	
E. Etheridge	Horse and wagon, from July 4 to July 31, 1861		701 62
Robert Morris	do		56 00
J. R. Briggs	Temporary clerk, from July 1 to July 8, at \$1,800 per annum		56 00
Jas. B. Smith & Co	Binding documents, 2d session 36th Congress, in sheep, at 50 cents:		39 13
	255 copies Miscellaneous Documents, vol. 1, for members	127 50	
	67 do do do do do executive departments	33 50	
	23 do do do do do foreign legations	11 50	
	78 do do do do do Secretaries	39 00	
	4 do do do do do United States mint	2 00	
	2 do do do do do Court of Claims	1 00	
	2 do do do do do library of Congress	1 00	
	2 do do do do do Military and Naval Academies	1 00	
	2 copies Report of Commissioner for Court of Claims	1 00	
	Same, in calf, at 61 cents:		
	30 copies Miscellaneous Documents, vol. 1, for House library	18 30	
	10 do do do do Clerk's office	6 10	
	20 do do do do Secretaries	17 08	
	2 8-quire blank books, Russia	24 00	
	2 sets morocco tags	5 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Jas. B. Smith & Co.—Continued	19 alphabets	\$4 75	
	1 6-quire royal Journal, Russia	12 00	
	4 volumes newspapers for House library	12 00	
	Ruling and lettering 685 books in House library	171 25	
	Lettering 24 Constitutions and Manuel	6 00	
	Tags in 17 blank books for committee rooms	25 00	\$519 48
L. W. Emmart	Engineer, pay-roll for July, 1861, in part	55 70	
J. H. Clements	do	41 30	
D. H. McElhone	do	100 00	
J. Mansfield	do	62 00	
Thomas Hunt	do	62 00	
Sylvester Adams	do	62 00	
Wm. Sanderson	do	62 00	
Wm. Mooney	do	62 00	
J. Jillard & Son	1 cask, 105 — 1 = 104 gallons sperm oil, at \$2 per gallon		507 00
J. D. B. Lettel	Folding documents, pay-roll for July, 1861	100 00	208 00
S. Phillips	do	100 00	
H. H. Clark	do	100 00	
J. R. Zimmerman	do	77 50	
A. B. McLain	do	37 50	
H. G. Devine	do	77 50	
N. C. Stone	do	77 50	
A. W. Walcott	do	77 50	
Z. Brown	do	62 00	
W. J. Harris	do	62 00	
J. W. Byram	do	30 00	
Geo. W. Hoover	Services in document room, for July, 1861		831 50
S. A. Power	Messenger in Clerk's office, for July, 1861		100 00
E. H. Birch	Services in document room, for July		100 00
			100 00

E. Reynolds	69 buckets of paste		69 00
W. F. Evans	Services in House library and folding documents		46 50
Wm. McHenry	Services in folding room, at \$2 50 per day, from July 1 to July 15, 1861		37 50
Wm. Laporte	Services in document room, from July 10 to July 31, 1861, 22 days, at \$1		33 00
H. Schreeve	Temporary mail boy, pay-roll for July, 1861	50 00	
J. A. Renshaw	do	50 00	
J. J. Gilbert	Page to Sergeant-at-arms, from July 5 to August 1		100 00
Edward Homan	Page in House of Representatives, July 4 and July 5, 1861		54 00
N. F. Beveridge	Expenses incurred by sickness of Hon. J. Swartz		4 00
Franck Taylor	British Almanac and Companion, 1861	1 75	85 00
	10 American Almanacs, 1861, \$15; Encyclopædia Britannica, \$5 50	20 50	
W. J. Ketcham	Winding clocks, July, 1861		22 25
B. F. Granger	Amount paid for hacks for Committee on Enrolled Bills		20 00
J. T. Chauncey	Repairing flag for Capitol		20 00
W. D. Wyvill	Repairing and glazing lanterns		15 25
	Do	1 75	
	Do	1 75	
	Do	1 00	
	1 new lantern	3 00	
G. Marston	Newspapers		7 50
J. S. Morrill	do		50 00
S. S. Blair	do		50 00
J. W. Crisfield	do		50 00
Fannan & McLain	"Daily Inquirer," for Hon. J. R. Morris, 1 year		50 00
J. S. Carlile	Stationery		6 00
S. S. Blair	do		24 50
J. S. Morrill	do		24 47
Gilman Marston	do		24 15
J. W. Crisfield	do		23 31
J. W. Fitzhugh	75 packing boxes		20 62
William Thomas	Laborer in the House of Representatives from July 1 to 17, 1861, at \$1 50		187 50
Frank Tavens	Laborer from July 4 to 11, at \$1 50		25 50
G. H. Chapman	Temporary clerk, pay-roll for July, 1861		12 00
William Averill	do	150 00	
J. A. Miller	do	150 00	
Walter McMichael	do	110 87	
	do	150 00	
	do		560 87

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Amos Reed	Clerk to select committee, of which J. F. Potter is chairman, from July 15 to August 1, at \$4, (resolution of July 16, 1861)	-----	\$64 00
Alexander Bruce	Washing 115 dozen towels for bath room in July, 1861, at 50 cents	-----	57 50
J. W. Forney	Pay-roll, quarter ending September 31, 1861:		
P. B. Hayes	Compensation to July 4, 1861	\$39 13	
John Bussing	do.....to July 4--do.....	23 48	
W. Forney	do.....to July 8--do.....	39 13	
J. B. Sheridan	do.....to July 6--do.....	29 35	
J. M. Lucas	do.....to July 6--do.....	29 35	
Jos. S. Read	do.....to July 7--do.....	41 09	
F. A. Soulé	do.....to July 8--do.....	31 30	
William B. Cook	do.....to July 8--do.....	31 30	
George Marston	do.....from July 9 to 17	35 21	
Ira Goodnow	do.....from July 1 to 5	29 35	
R. W. Stevens	do.....from July 1 to 5	23 64	
Frank Fuller	do.....from July 1 to 5	85 60	
E. D. Bridges	do.....from July 1 to 15	48 91	
Thomas J. Lucas	do.....to July 8	37 83	
E. F. Parker	do.....to July 8	31 30	
	do.....from July 9 to 19	43 04	
		-----	599 01
James W. Fitzhugh	Repairing sign for Post Office, \$1 50; do. 2 desks, \$1	2 50	
	24 hooks in hat room, \$6; 4 spool slides, \$4	10 00	
	Repairing 1 chair, 50 cents; do. 2 desks, 50 cents	1 00	
	Do.....sofa covers, \$2 50; cutting oil-cloth, \$1 50	4 00	
	Do.....set of chairs	5 00	
	Door plates for Revolutionary Invalid Pensions, \$1; matting and repairs in hall, \$25	26 50	
	43 locks and keys for committee rooms, at \$2	86 00	
	37 door keys	37 00	
	206 drawer keys in hall and committee rooms	103 00	
	Repairing door and locks in No. 6, and door plate in telegraph room	2 00	
	Do.....thermometer and bells in Clerk's office	1 25	

Do.....closet and window, 75 cents; 1 bolt, Post Office, \$1 25.....	2 00	
Do.....shade in Committee of Ways and Means.....	1 00	
Taking down and packing 3 sets curtains.....	3 00	
Laying oil-cloth in Speaker's room.....	1 00	
1 set casters for sofa.....	1 50	
Hanging map and repairing shades Committee on Military Affairs.....	1 50	
3 large linen shades for Post Office, at \$3 50.....	10 50	
1 large lock and key.....	3 00	
Repairing bookcase, washstand, and hat rooms.....	1 50	
Hose rack in boiler room.....	5 00	
Repairing desk in hall.....	50	
.....do.....gallery door and oil-cloth.....	1 50	
Signs for water-closets.....	5 00	315 25
5 horses and wagons for May.....	310 00	
1 saddle horse for May.....	46 50	
5 horses and wagons for June.....	300 00	
1 saddle horse for June.....	45 00	701 50
5 horses and wagons from July 1 to 15, 1861.....	150 00	
1 saddle horse for same time.....	22 50	
3 horses and wagons from July 16 to 31.....	96 00	
1 horse and wagon from March 1 to July 5, 1861.....	-----	
1.....do.....July 5 to August 1, 1861.....	-----	
12 covered painted buckets, at \$2.....	24 00	
50 spittoons, at 87½ cents; 2 dozen ice-pitchers, at 25 cents each.....	49 75	
200 palm-leaf fans.....	16 00	
24 feather dusters.....	72 00	
24 willow waste baskets.....	36 00	
Repairing bell in No. 55, \$2 50; water-cooler, \$12.....	14 50	
4 yards oil-cloth, at \$1 25; 50 pounds sperm candles, at 62½ cents.....	36 25	
75 pounds white soap, at 10 cents.....	7 50	
1 gross violet soap, \$24; hatchet, chisel, and corkscrew, \$3 25.....	27 25	
Covering 3 chairs with leather, \$9; 1 cushion, \$3 50.....	12 50	
Covering large committee table with cloth, Military Affairs.....	12 00	
Repairing window shade, \$1; covering table with cloth, \$4 50.....	5 50	
5 dozen towels for bath rooms, \$32 50; 50 spittoons, \$43 75.....	76 25	
4 dozen chamois skins, \$60; 6 horse buckets, \$12.....	72 00	
Samuel Torbert.....		
Samuel Torbert.....		
H. W. Hoffman.....		
Edward Ball.....		
J. D. Thompson.....		

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. D. Thompson—Continued.....	½ gross brown Windsor soap 4 large mail baskets, at \$3 25 1 water-cooler, \$12; 50 pounds castile soap, \$12 50..... 2 pounds nails, at 10 cents	\$9 00 13 00 24 50 20	\$508 20
Thomas H. Stockton.....	Chaplain to House of Representatives at 1st session 37th Congress, at \$250 per month, (resolution July 25, 1861,) from July 4 to August 6, 1861.....	.....	266 12
R. W. Sherman.....	Talley clerk, (resolution of March 3, 1857,) to August 1, 1861.....	.....	164 32
J. M. Barclay.....	(Resolution of March 3, 1857,) from March 1 to August 1, 1861.....	.....	142 91
Mary Tronie.....	Washing 59 dozen towels.....	.....	29 50
Samuel Parks.....	Hack to carry committee to President.....	.....	1 50
M. C. Gritzner.....	Clerk to Committee on Commerce from July 6 to August 6, 1861.....	.....	128 00
J. H. Hobbs.....	Clerk to Judiciary Committee from July 4 to August 2, 1861.....	.....	120 00
Ezra Duvall.....	Clerk to Committee of Elections from July 4 to 31, 1861.....	.....	112 00
A. R. Smith.....	Clerk to Committee on Military Affairs from July 8 to 31, 1861.....	.....	96 00
W. H. & O. H. Morrison.....	1 blank book.....	1 25	
	1 4-quire blank ledger.....	4 50	
			5 75
J. S. Kellogg.....	Folding documents, pay-roll for July, 1861.....	93 00	
E. E. Coffin.....	do.....do.....do.....	93 00	
W. B. King.....	do.....from July 12 to 31, 1861.....	60 00	
Ware Tappan.....	do.....from July 1 to 11, 1861.....	33 00	
L. D. Johnson.....	do.....for July, 1861.....	77 50	
Still. Moores.....	do.....do.....	62 00	
			418 50
J. B. McKean.....	Newspapers.....	.....	50 00
C. B. Calvert.....	do.....do.....	.....	50 00
E. H. Rollins.....	do.....do.....	.....	50 00
Morton McMichael.....	North American and United States Gazette : S. Colfax..... E. P. Walton..... R. McKnight.....	1 10 1 25 2 00	

C. H. Anderson.....	Thomas S. Stevens	2 50	6 85
	30 dozen $\frac{1}{2}$ pints black ink, at \$1 50.....	45 00	
	10...do...ivory handle letter stamps.....	50 00	
D. Loomis	Stationery	-----	95 00
C. B. Calvert.....	do	-----	24 65
E. H. Rollins	do	-----	24 30
J. B. McKean	do	-----	23 84
J. E. English	do	-----	22 93
J. T. Chauncey.....	do	-----	22 87
J. D. Taules	Laborer, pay-roll for July, 1861	46 50	
Jabez Pittard.....	do..... from July 11 to 31, 1861	30 00	
David Fisher.....	do.....do.....do	30 00	
John Johnson.....	do.....for July, 1861.....	46 50	
Lewis Saunders.....	do.....do.....do	46 50	
Ed. Thomas.....	do.....do.....do	46 50	
Jas. Schureman.....	do.....from July 4 to 31, 1861	42 00	
John Maury.....	do.....for July, 1861.....	46 50	381 00
John Costen	Laborer, pay-roll for July 1861.....	62 00	
Levi Neal.....	do.....do.....do	46 50	
William H. Smith	do.....do.....do	46 50	
W. Twine.....	do.....do.....do	46 50	
R. Griffin.....	do.....do.....do	46 50	
Alexander Bruce.....	do.....do.....do	46 50	
Samuel Turbot	Cartage of 295 loads public documents in July, 1861.....	-----	294 50
E. R. Jewett.....	Engraving 458 copper-faced illustrations of machinery for Patent Office Reports for 1860, at \$11 98	5,486 84	147 50
	Less 6 per cent. reserved.....	329 21	
G. K. Shiel	Newspapers	-----	5,157 63
S. S. Phelps.....	do	-----	50 00
S. S. Phelps.....	Stationery	-----	50 00
G. K. Shiel	do	-----	25 00
Isaac Strohman.....	2 days as temporary clerk, February 16 and 17, 1860	-----	22 95
J. B. Smith	Binding documents, 2d session 36th Congress, in sheep:	-----	10 00
	470 Reports of Committees, vol. 3, part 1, at 50 cents, Interior Department.....	235 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. B. Smith—Continued.....	295 Miscellaneous Documents, at 50 cents, Interior Department	\$147 50	
	40.....do.....do.....do.....State Department	20 00	
	255 Reports of Committees, vol. 3, part 1, for members.....	127 50	
	Lettering 579 books in House library	134 75	
	Do...463...do.....do.....	115 75	\$780 50
J. B. Smith.....	7½ reams white letter paper engraved.....	45 00	
	7½...do...packet post.....	30 00	
	2 dozen crown 8vo. manuscript books	9 00	
	2...do...demy.....do.....	12 00	
	2...do...medium.....do.....	15 00	
	2...do...crown, 4to	18 00	
	2...do...demy.....do.....	24 00	
	2...do...medium.....do.....	30 00	
	50 gross extra super commercial steel pens.....	42 50	
	34 gross engraved letter envelopes.....	29 75	
	13½ do.....do...large legal do.....	16 87	
	13½ do.....do...small do...do	15 18	
	100 reams white paper, folding documents	150 00	
	75,350 newspaper envelopes	226 05	663 35
W. A. Gatley	Page, pay-roll, from July 4 to August 6, 1861.....	68 00	
R. G. Olcott	do.....do.....do.....do	68 00	
George D. Bowen.....	do.....do.....do.....do	68 00	
A. J. Parrish.....	do.....do.....do.....do	68 00	
William D. Todd.....	do.....do.....do.....do	68 00	
J. E. Pillsbury	do.....do.....do.....do	68 00	
Henry Goodwin.....	do.....do.....do.....do	68 00	
George Capron	do.....do.....do.....do	68 00	
Daniel W. Davis	do.....do.....do.....do	68 00	
George S. M. Boyd	do.....do.....do.....do	58 00	
Charles White.....	do.....do.....do.....do	58 00	

Charles Hinton.....	do.....do.....do.....do.....do.....	58 00
Edgar Stever, jr.....	do.....do.....do.....do.....do.....	58 00
Frank C. Harris.....	do.....do.....do.....do.....do.....	58 00
George Y. Coffin.....	do.....do.....do.....do.....do.....	58 00
Henry Clay McCane.....	do.....do.....do.....do.....do.....	58 00
Edward W. Hall.....	do.....do.....do.....do.....do.....	58 00
H. A. Duncanson.....	do.....do.....do.....do.....do.....	58 00
J. H. Kaughman.....	do.....do.....do.....do.....do.....	58 00
John Jones.....	do.....do.....do.....do.....do.....	58 00
W. Norris.....	Page, pay roll of riding pages, from July 4 to August 6, 1861.....	68 00
William O'Neal.....	do.....do.....do.....do.....do.....	68 00
William D. Craven.....	do.....do.....do.....do.....do.....	58 00
Alonzo Getty.....	do.....do.....do.....do.....do.....	54 00
J. J. Gilbert.....	Page to Sergeant-at-arms from August 1 to 6, 1861.....	248 00
Ellery Reynolds.....	Folding documents: Pay-roll of folders, at \$2 50 per day, for July and August, 1861.....	12 00
G. W. Martenet.....	do.....do.....do.....do.....do.....	85 00
Alfred Hine.....	do.....do.....do.....do.....do.....	65 00
William Cunningham.....	do.....do.....do.....do.....do.....	65 00
John M. Shomo.....	do.....do.....do.....do.....do.....	65 00
Levi Mesly.....	do.....do.....do.....do.....do.....	55 00
E. E. Coffin.....	Folder, pay-roll, from August 1 to 6, 1861, at \$3 per day.....	50 00
W. B. King.....	do.....do.....do.....do.....do.....	18 00
L. D. Johnson.....	do.....do.....do.....do.....do.....	18 00
Still. Moores.....	do.....do.....do.....do.....do.....	15 00
Edward Ball.....	do.....do.....do.....do.....do.....	12 00
	Fees as Sergeant-at-arms:	
	Summons to Chauncy Smith.....	2 20
	Do.....Mr. Clemmens.....	2 20
	Do.....Thomas Mansfield.....	2 20
	Do.....J. F. Shields.....	2 20
	Do.....E. F. G. Lawson.....	2 20
	Do.....George R. McIntyre.....	2 20
	Do.....Tibus Bastinelli.....	2 20
	Do.....John H. Johnson.....	2 20
	Do.....Dr. Parks.....	2 20

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Edward Ball—Continued.....	Summons to W. R. H. Leach.....	\$2 20	
	Do.....John Keans.....	2 20	
	Do.....C. Hazlet.....	2 20	
	Do.....J. B. Hill.....	2 20	
	Do.....Samuel Warren.....	2 20	
	Do.....Dr. Munson.....	2 20	
	Do.....J. F. Hodgson.....	2 20	
	Do.....J. Rozencrants.....	2 20	
	Do.....Thomas Mansfield.....	2 20	
	Do.....W. P. Sherman.....	2 20	
	Do.....B. A. Janvier.....	2 20	
	Do.....R. G. Dove.....	2 20	
	Do.....John Hallock.....	2 20	
	Do.....William S. Graham.....	2 20	
	Do.....Theophilus Fiske.....	2 20	
	Do.....Jona. Gustee.....	2 20	
	Do.....E. C. Eckloff.....	2 20	
	Do.....Mr. Mitchell.....	2 20	
	Do.....James Bowen.....	2 20	
	Do.....C. K. Storm.....	2 20	
	Do.....Thomas Sparks.....	2 20	
	Do.....William H. Hamilton.....	2 20	
	Do.....George Geddis.....	2 20	
	Do.....Franklin Henry.....	2 20	
	Do.....M. P. Swain.....	2 20	
	Do.....Jos. H. Osborne.....	2 20	
	Do.....Resin Pomphry.....	2 20	
	Do.....J. L. Cramer.....	2 20	
	Do.....J. W. Granger.....	2 20	
	Do.....Mr. Beatie.....	2 20	
	Do.....C. H. Bliss.....	2 20	
	Do.....E. P. G. Rayson.....	2 20	

Do.....A. McIntyre.....	2	20
Do.....D. M. Kelsey.....	2	20
Do.....J. L. Dugger.....	2	20
Do.....G. A. Emmull.....	2	20
Do.....G. G. W. Shannets.....	2	20
Do.....William Rutherford.....	2	20
Do.....Frederick Calvert.....	2	20
Do.....Charles Calvert.....	2	20
Do.....C. C. Jones.....	2	20
Do.....H. L. Anderson.....	2	20
Do.....Mr. Clements.....	2	20
Do.....R. H. Gillett.....	2	20
Do.....Mr. Baxter.....	2	20
Do.....G. B. Towles.....	2	20
Do.....O. S. H. Peck.....	2	20
Do.....Joseph R. Burch.....	2	20
Do.....Mr. Stevens.....	2	20
Do.....Jos. B. Will.....	2	20
Do.....Mr. French.....	2	20
Do.....Mr. Havaland.....	2	20
Do.....Dr. Parks.....	2	20
Do.....Jos. L. Burch.....	2	20
Do.....A. J. Lancoar.....	2	20
Do.....Dr. Loomis.....	2	20
Do.....Allen Goodrich.....	2	20
Do.....H. G. Babcock.....	2	20
Do.....Lieutenant Brown.....	2	20
Do.....Mr. Horr.....	2	20
Do.....C. N. Vedder.....	2	20
Do.....R. Bailey.....	2	20
Do.....Z. Whitmore.....	2	20
Do.....John T. Cromptsey.....	2	20
Do.....W. S. Fort.....	2	20
Do.....Mr. Taft.....	2	20
Do.....Jos. Dugle.....	2	20
Do.....G. C. Collison.....	2	20
Do.....William Johnson.....	2	20
Do.....Thomas Mackabee.....	2	20
Do.....R. B. Clark.....	2	20

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Edward Ball—Continued.....	Summons to Jacob Bigelow	\$2 20	
	Do..... William E. Culver.....	2 20	
	Do..... J. C. Lewis.....	2 20	
	Do..... George W. Johns.....	2 20	
	Do..... W. J. Graham	2 20	
	Do..... F. Dorsay.....	2 20	
	Do..... Captain James Kelly.....	2 20	
	Do..... William Laidlaw	2 20	
	Do..... Isaac Rosencrants.....	2 20	
	Do..... J. S. Foler.....	2 20	
	Do..... W. H. College.....	2 20	
	Do..... E. Wheeler.....	2 20	
	Do..... William Bramburger.....	2 20	
	Do..... J. A. Beatey	2 20	
	Do..... E. A. Thomas.....	2 20	
	Do..... Nathan Darling.....	2 20	
			\$222 20
Job N. Angus.....	1 dozen brooms, \$6; 6 yards unbleached muslin, 48 cents.....	6 48	
	19 keys to committee rooms.....	19 00	
	Taking down two bulkheads.....	2 00	
	1 key for Committee on Accounts.....	1 00	
	500 feet of lumber for steps.....	10 00	
	Cartage of same	1 00	
	1½ days' work of carpenter	3 75	
	Repairing 5 locks.....	2 50	
	7 keys to committee and other rooms.....	7 00	
	Easing doors	1 50	
	Putting up racks in cloak room	2 50	
	5 keys to rooms	5 00	
	Repairing and hanging door in gallery.....	1 50	
	Putting on 10 bolts in gallery.....	2 50	
	4 keys to committee rooms.....	4 00	

1 closet lock, 75 cents; 1 chest lock, 50 cents.....	1 25
40 desk keys in hall.....	20 00
Repairing lock, 50 cents; repairing lock, \$1; do., 75 cents.....	2 25
36 keys to desks.....	18 00
New lock to cloak room.....	2 00
13 keys to desks.....	6 50
Repairing ten desk locks.....	2 50
1 key to clerks' office.....	1 00
Repairing lock in north door.....	1 00
16 keys to desks.....	8 00
1 key to east hall door.....	1 00
1 bolt to folding room.....	1 25
Easing door and shutter in room of Committee on Accounts.....	1 00
Repairing locks in post office.....	50
Repairing 6 locks on hall desks.....	- 1 50
11 keys to desks.....	5 50
Repairing desk lock.....	25
4 dozen silver knob bolts.....	8 00
1 dozen spit boxes.....	12 00
6 desk locks.....	12 00
3 keys for do.....	1 50
Easing shutters in room of Committee on Elections.....	1 00
4 desk locks.....	8 00
1 key to Speaker's bookcase.....	50
21 keys for committee rooms.....	21 00
1 bolt to box rooms.....	1 25
Repairing lock to post office.....	50
1 bolt, Committee on the Post Office and Post Roads, \$1 25; 1 do., folding room.....	2 50
Putting up water cooler.....	2 50
Legs to table in post office.....	1 00
Hanging 2 doors and hinges in kitchen.....	2 00
1 bolt, 62 cents; 1 knob, \$1.....	1 62
1 bolt in kitchen.....	50
1 key for Committee on Indian Affairs.....	1 00
2 keys, Committee on the Post Office and Post Roads.....	2 00
8 keys to committee and other rooms.....	8 00
7 desk keys.....	3 50
1 lock to cloak room.....	2 00
1 pair large brass hooks.....	1 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Job N. Angus—Continued	10 desk keys	\$5 00	
	Repairing 2 windows	1 00	
	1 key and 2 locks	5 00	
	4 keys to desks	2 00	
	5 keys for committee rooms	5 00	
	1 dozen desk locks	6 00	
	$\frac{1}{2}$ dozen packing boxes	15 00	
	13 paste boxes	6 50	
	19 dozen papers of tacks, at 96 cents	18 24	
	6.....do.....at \$1 20	7 20	
	20 papers of tacks, at 12 $\frac{1}{2}$ cents	2 50	
	1.....do.....do	10	
	$\frac{1}{2}$ dozen sail needles	60	
	1 pound glue	37	
	1 truck, for folding room	17 00	
	9 sets spring hinges	81 00	
	$\frac{1}{4}$ dozen locks for desks	12 00	
	6 gross desk keys	6 00	
	1 desk for clerks' office	35 00	\$462 11
J. W. Jones	Horse and wagon for July, 1861	-----	62 00
A. W. Fletcher	Clerk to Committee on Revolutionary Pensions, from January 1 to March 4, 1861, 63 days	-----	252 00
A. R. Smith	Clerk to Committee on Military Affairs, from July 4 to 7, and from August 1 to 6, 6 days	-----	40 00
E. R. Jewett	Engraving 940 copper-faced illustrations of machinery for Patent Office Reports, 1860, at 11 $\frac{23}{100}$ each	11,261 20	
	Less 6 per cent. reserved	675 67	
		-----	10,585 53
Wm. Cook	Folder, pay-roll for July and August, (per piece)	3 41	
Charles Bryan	do.....do	12 41	
Charles Franklin	do.....do	13 16	

Jos. Simmonds	do	do	11 70
Edward Schaffier	do	do	13 50
Wm. H. Rollins	do	do	13 06
Theodore Warner	do	do	12 48
Albert Shaw	do	do	15 36
Stephen Lennan	do	do	10 74
Jas. Hough	do	do	20 08
Jno. Y. Mackey	do	do	4 76
			130 66
J. De Saules	Laborer, pay-roll from August 1 to August 6, 1861		9 00
J. Pettan	do	do	9 00
J. Schueman	do	do	9 00
E. M. Thomas	do	do	9 00
John Massey	do	do	9 00
			45 00
L. J. Middleton	5 bushels ice daily, from July 1 to 3, 1861		7 50
	15 bushels ice daily, from July 4 to August 6, 1861		217 50
			225 00
Sheldon & Co	50,000 thick white envelopes, 9½ and 4, at \$5 50		275 00
David Scott	116 reams Manilla paper, 24 by 27, 32 pounds, at \$2 70		313 20
G. & T. Parker & Co	20 pounds Castile soap, at 25 cents		
	1½ dozen black scrubs		5 00
	36 pounds patent sperm candles, at 60 cents		11 25
	125 pounds brown soap		21 60
	4 gross matches, \$16; 50 pounds brown soap, \$4		10 00
	5 dozen scrubs, \$20; 200 pounds soda, \$12 50		20 00
	24 brass candlesticks, \$12; 6 dozen brown Windsor soap, \$54		32 50
	29 pounds candles, at 60 cents		66 00
	4 dozen dusters		17 40
	12 scrubs, \$12; 1 bottle oil, 63 cents		24 00
	3 dozen buckets		12 63
	4 dozen brooms, \$20; 1 dozen whitewash brushes, \$18		22 50
	100 pounds brown soap		38 00
	1 tin bucket, \$1 75; 200 pounds brown soap, \$16		8 00
	1 cup		17 75
	139 pounds soap, \$11 12; 1 dozen buckets, \$15		75
	1 large clothes' basket		26 12
	4 dozen large-sized brooms, \$20; 4 dozen soap dishes, \$16		2 50
			36 00
			372 00

	255.....do.....do.....part 2, House of Representatives	127	50
	78.....do.....do.....parts 1 and 2, senators	78	00
	67.....do.....do.....do.....executive departments.....	67	00
	23.....do.....do.....do.....foreign legations.....	23	00
	4.....do.....do.....do.....United States mint.....	4	00
	6.....do.....do.....do.....clerks, Congressional Li- brary, Naval and Military Academies.....	6	00
	Same, in calf, at 61 cents, viz:		
	30 copies Reports of Committees, vol. 3, parts 1 and 2, House library.....	36	60
	10.....do.....do.....do.....Clerk's office	12	20
	28.....do.....do.....do.....senators	34	16
	Lettering 425 books in House library, at 25 cents.....	106	25
	Lettering 403 books in House library, at 25 cents.....	100	75
A. Hoen & Co.....	Lithographing and printing 6,550 copies each of the following maps for the Coast Survey, 1860, viz: No. 7, at 88 cents per 100; No. 19, at 85 cents per 100; No. 20, at 60 cents per 100; No. 21, at 88 cents per 100.....	---	---
N. Darling.....	Capitol police, compensation pay-roll for August, 1861.....	72	50
A. K. Arnold.....	do.....do.....do.....	45	83
S. J. Johnson.....	do.....do.....do.....	45	83
J. A. Magee.....	do.....do.....do.....	45	83
William H. Thompson.....	do.....do.....do.....	45	83
B. F. Beveridge.....	do.....do.....do.....	45	83
C. C. Carey.....	do.....do.....do.....	45	83
S. C. Wailes.....	do.....do.....do.....	45	83
J. W. Westfall.....	do.....do.....do.....	45	83
D. A. Clayton.....	do.....do.....do.....	45	83
J. B. Brown.....	do.....do.....do.....	45	83
J. A. Wise.....	do.....do.....do.....	45	83
John Vanderburgh.....	do.....do.....do.....	45	83
G. W. Garrett.....	do.....do.....do.....	45	83
W. J. Belshaw.....	do.....do.....do.....	33	33
Henry N. Carter.....	Folding documents, pay-roll for August, 1861.....	100	00
Elias S. Reed.....	do.....do.....do.....	100	00
George W. Westavillt.....	do.....do.....do.....	100	00
George B. Woodbridge.....	do.....do.....do.....	100	00
S. A. Power.....	do.....do.....do.....	100	00
Ezekial Young.....	do.....do.....do.....	100	00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
W. T. Evans.....	Folding documents, pay-roll for August, 1861.....	\$46 50	
William Laporte.....	do.....do.....	46 50	\$693 00
J. B. Smith & Co.....	Binding the following documents in sheep, 2d session 36th Congress: 470 copies Reports of Committees, vol. 1, for Interior Department..... 255.....do.....House of Representatives..... 67.....do.....executive departments..... 23.....do.....foreign legations..... 78.....do.....senators..... 4.....do.....United States mint..... 2.....do.....Court of Claims..... 2.....do.....Congressional Library..... 114 copies House Journal for governors of States..... Same, in calf— 30 copies Reports of Committees, vol. 1, House library..... 10.....do.....Clerk's office..... 28.....do.....senators..... 180 volumes Statutes at Large, half calf, for House library..... 2 volumes Daily Globe..... Lettering 427 books in House library.....	235 00 127 50 33 50 11 50 39 00 2 00 1 00 1 00 57 00 18 30 6 10 17 08 180 00 6 00 106 75	
W. A. Wheeler.....	12 dozen quart bottles ink..... 24 dozen pint bottles ink..... 3 gross blue barrel pens..... 24 dozen Rodger's erasers..... 3,000 quills, No. 100.....	29 40 42 00 4 95 12 00 12 00	842 73
Philp & Solomon.....	4 dozen bottles mucilage..... 41½ dozen silk taste..... 1 dozen black sand..... 48 dozen red tape..... 4 reams ruled commercial note.....	8 00 14 50 2 00 14 40 10 00	160 35

5 reams plain cap	17 50
4 dozen quart bottles Maynard & Noyes's ink	16 00
2 dozen pint.....do.....do.....	5 00
12 5-quire blank books.....	15 00
5,000 extra thick white official envelopes	30 00
2 dozen pen wipers	6 00
42 dozen lead pencils	25 00
4 dozen Maynard & Noyes's ink, $\frac{1}{2}$ pints.....	7 00
3.....do.....do.....pints.....	7 50
5 reams plain cap.....	17 50
5 reams first class plain letter.....	20 00
19 $\frac{2}{3}$ dozen silk taste	57 50
12 5-quire blank books, $\frac{1}{2}$ ream.....	15 00
102 dozen lead pencils	61 20
20 dozen pen wipers	45 00
4 dozen sand boxes.....	12 00
4 large bottles mucilage.....	14 00
3 small.....do.....	6 00
3 reams commercial note, ruled	7 50
13.....do.....	26 00
15.....do.....plain.....	37 50
8.....do.....gilt and ruled.....	24 00
12.....do.....ruled.....	30 00
15 reams plain gilt.....	45 00
7 reams commercial note, gilt	19 25
13.....do.....do.....	29 25
6 dozen packs extra visiting cards.....	24 00
12 dozen carmine ink.....	30 00
2 dozen sand boxes.....	6 00
5 dozen Maynard & Noyes's ink, quarts.....	20 00
300 boxes sand.....	7 50
4 dozen sand boxes	12 00
8 dozen Maynard & Noyes's ink, $\frac{1}{2}$ pints.....	14 00
7.....do.....do.....do.....	17 50
8.....do.....do.....quarts.....	32 00
15,000 extra thick white envelopes, official	90 00
1 gross Blagg & Co.'s pens.....	1 00
2 dozen large bottles mucilage.....	7 00

925 80

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Alexander & Cook	Binding 10,040 volumes Patent Office Report, 1860, vol. 1, Mechanical.....	\$1,204 80	\$4,981 68
	Binding 31,474.....do.....do.....Agricultural.....	3,776 88	
L. W. Emmart	Engineers, &c., pay-roll for August, 1860.....	125 00	635 00
J. H. Clements	do.....do.....do.....	100 00	
D. A. McElhun	do.....do.....from August 1 to August 7.....	23 91	
A. D. Nichols	do.....do.....from August 8 to August 31.....	76 09	
Joseph Mansfield	do.....do.....for August, 1860.....	62 00	
Thomas Hunt	do.....do.....do.....	62 00	
Sylvester Adams	do.....do.....from August 1 to August 9.....	18 00	
J. H. Garges	do.....do.....from August 10 to August 31.....	44 00	
W. Sanderson	do.....do.....for August, 1860.....	62 00	
Joseph B. Staub	do.....do.....do.....	62 00	
Aaron Harding	Laborers, pay-roll for August, 1861.....	62 00	
John Costin	do.....do.....do.....	46 50	
Levi Neal	do.....do.....do.....	46 50	480 50
William H. Smith	do.....do.....do.....	46 50	
William Twine	do.....do.....do.....	46 50	
Alexander Bruce	do.....do.....do.....	46 50	
John Johnson	do.....do.....do.....	46 50	
Lewis Saunders	do.....do.....do.....	46 50	
Daniel Fisher	do.....do.....do.....	46 50	
John F. Chauncey	do.....do.....do.....	46 50	
G. Marston	Horse and carriage and two saddle horses from July 4 to August 6, 34 days.....	102 00	170 00
	Horse and wagon, same time.....	68 00	
J. D. B. Little	Folding documents, pay-roll for August, 1861.....	100 00	93 00
Samuel Phillip	do.....do.....do.....	100 00	
H. H. Clark	do.....do.....do.....	100 00	
J. S. Kellogg	do.....do.....do.....	93 00	

A. B. McLain	do	77 50
J. R. Zimmerman	do	77 50
A. H. Wolcott	do	77 50
N. C. Stone	do	77 50
H. G. Divine	do	77 50
Nelson Joy	do	75 00
J. H. Henry	do	50 00
W. J. Harris	do	62 00
Z. Brown	do	62 00
J. W. Byram, jr.	do	46 50
Robert Morris	Horse and carriage for August	1,076 00
J. W. Clayton	Horse and carriage for August	62 00
J. D. Defrees	Ruling, faint, 2,000 letter sheets	62 00
	Ruling, faint and red, 1,000 headings	5 00
	Mounting on boards 50 notices, "no admittance"	5 00
	Ruling, faint, 500 blank vouchers	6 25
	Ruling, faint, 500 newspaper accounts	1 25
	Ruling, faint and red, 500 blank bills	1 25
	Cutting 222,000 names of members	2 50
	Mounting on board and looping 6 notices	55 50
	1 ream cap paper ruled to pattern	75
		6 00
		83 50
		12 52
	Less 15 per cent	
Jos. D. Ward	Services in old hall of House of Representatives, from July 23 to August 6, 1861, 15 days, at \$3	70 98
Van Ingen & Snyder	Drawing and engraving on wood 1 cut for Delafield's Report	45 00
	Drawing and engraving on wood 1 cut for Coast Survey Report of 1860	25 00
J. F. Callan	1 copy of Callan's Military Laws	4 00
	1 copy of Callan's Naval Laws	4 00
A. S. Abell & Co	"Baltimore Sun" for:	8 00
	Hon. M. R. H. Garnett, 1 year	4 00
	M. A. Otero, 1 year	4 00
	J. D. Ashmore, 3 months	1 00
	A. R. Boteler, 3 months	90

A—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
A. S. Abell & Co.—Continued	Hon. J. A. Logan, 2½ months	\$0 86	\$11 43
	T. G. Davidson, 2 months	67	12 00
Chas. Eckbrand	1 dozen automatic inkstands	-----	150 00
Wm. Averill	Services as temporary clerk for August, 1861	-----	2 50
J. W. Forney	Advertising proposals for advertising for lithographing in "The Press"	-----	34 00
Mary Thomas	Services in ladies' retiring room, from July 4 to August 6, 1861	-----	150 00
John A. Miller	Services as temporary clerk, for August	-----	14 50
Mary Twine	Making 29 dozen towels	-----	31 75
Alexander Bruce	Washing 63½ dozen towels	-----	20 00
W. J. Ketcham	Winding clock, in August, 1861	-----	57 00
Still. Moores	57 buckets of paste	-----	150 00
Daniel McCook	Services as temporary clerk, August, 1861	-----	-----
J. A. Renshaw	Temporary mail-boy, pay-roll for August, 1861	50 00	-----
Henry Schreiner	do.....do	50 00	100 00
Emerson Etheridge	Use of horse and wagon, for August	-----	62 00
Alexander & Cooke	Binding documents, viz:	-----	-----
	5,000 volumes Smithsonian Reports, 1860	600 00	-----
	1,303 volumes Patent Office Reports, (Mechanical,) vol. 1, 1860	156 36	-----
	47,918 volumes Patent Office Reports, (Agricultural,) vol. 1, 1860	5,750 16	-----
	992 volumes Pacific Railroad Reports, part 1, at 85 cents	843 20	-----
	507 volumes Pacific Railroad Reports, part 2, at 85 cents	430 95	7,780 67
J. B. Smith & Co.....	Binding documents, 2d session 36th Congress, in sheep, at 50 cents, for the Interior Department, members of Congress, executive departments, foreign legations, senators, United States mint, Congressional library, Court of Claims, and the Naval and Military Academies, viz:	-----	-----
	903 volumes Reports of Committees, vol. 2	451 50	-----
	648 volumes Reports of Court of Claims, vol. 3	324 00	-----
	1 volume Reports of Committees	1 00	-----
	Same, in calf, at 61 cents:	-----	-----

J. B. Smith & Co.....	68 volumes Reports of Committees, vol. 2.....	41 48	1,082 93
	68 volumes Reports of Court of Claims, vol. 3.....	41 48	
	12 volumes Statutes at Large.....	12 00	
	Fitting and lettering 432 volumes in House library.....	108 00	
	Fitting and lettering 409 volumes in House library.....	102 25	
	2 copies of House Journal, for office of House of Representatives.....	1 22	
Stationery:			
	26 15% M additional newspaper envelopes.....	78 45	1,423 97
	7 1/2 reams Eng. letter paper.....	43 50	
	7 reams packet note paper.....	28 00	
	20 reams commercial note paper, gilt edge.....	50 00	
	20 reams letter paper, gilt edge.....	90 00	
	298 reams Manilla paper, medium size.....	667 52	
	318 reams Manilla paper, small size.....	179 20	
	8 reams Manilla paper, large size.....	26 80	
	24 extra superfine morocco portfolios, letter and cap.....	60 00	
John C. Rives.....	24 copies Congressional Globe and Appendix, for 1st session 37th Congress, for each of 181 members and delegates of that session, making 4,344 volumes, at \$1 10 per copy.....		
A. Hoen & Co.....	Lithographing and printing maps for Coast Survey Reports of 1860: Map No. 1, 6,550 copies, at \$1 60 per 100..... Map No. 10, 6,550 copies, at \$1 80 per 100..... Map No. 15, 6,550 copies, at 92 cents per 100..... Map No. 22, 6,550 copies, at 50 cents per 100..... Map No. 28, 6,550 copies, at \$1 32 per 100.....	104 80 117 90 60 26 32 75 86 46	4,778 40
Thomas Averay..... W. H. McKenney.....	Whitening, &c., for bath-rooms..... Services for folding documents, from February 15 to June 25, 1860, 131 days, at \$2 50 per day..... Less amount received.....	 196 50 60 86	402 17 50 00
J. S. Watrous.....	Services in folding room, from February 15 to June 25, 1860, 131 days, at \$1 50..... Less amount received.....	196 50 35 33	135 64
Franklin Barrett.....	Services for folding documents, from February 1 to June 25, 1860, 146 days, at \$1 50..... Less amount received.....	219 00 42 90	161 17 176 10

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Henry N. Carter.....	Folder, pay-roll for September, 1861.....	\$100 00	
Elias S. Reed.....	do.....do.....	100 00	
Geo. W. Martinet.....	do.....do.....	100 00	
Geo. B. Wooldridge.....	do.....do.....	100 00	
H. L. Hosmer.....	do.....do.....	100 00	
Ez. Young.....	do.....do.....	100 00	
Wm. T. Evans.....	do.....do.....	45 00	
John F. Brant.....	do.....do.....	45 00	\$690 00
J. D. Littell.....	Folder, pay-roll for September, 1861.....	100 00	
J. S. Reed.....	do.....do.....	100 00	
Sam'l Quicksall.....	do.....do.....	100 00	
Nelson Joy.....	do.....do.....at \$3 00 per day.....	90 00	
Lawrence Bess.....	do.....do.....at 2 00 per day.....	90 00	
J. V. Zimmerman.....	do.....do.....at 2 50 per day.....	75 00	
A. M. McLain.....	do.....do.....do.....	75 00	
J. M. Shones.....	do.....do.....do.....	75 00	
A. H. Walcott.....	do.....do.....do.....	75 00	
J. H. Henry.....	do.....do.....do.....	75 00	
Wm. Cunningham.....	do.....do.....at 2 00 per day.....	60 00	
W. J. Harris.....	do.....do.....do.....	60 00	
Z. Brown.....	do.....do.....do.....	60 00	
Levi Meilley.....	do.....do.....at 1 50 per day.....	45 00	
Alexander & Cooke.....	Binding documents, viz: 53,080 volumes Agricultural Patent Reports, 1860.....		1,080 00
J. B. Smith & Co.....	Binding documents 2d session 36th Congress, in sheep, for House of Representatives, Interior Department, executive departments, foreign legations, senators, United States mint, Congressional library, Court of Claims, and Naval and Military Academies, viz: 255 volumes Reports of Court of Claims, volume 3..... 903 volumes Reports of Court of Claims, volume 1.....		6,369 60
		127 50	
		451 50	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
John H. Barker.....	Engineer, pay-roll for September, 1861.....	\$60 00	
John A. Gayes.....	do.....do.....	60 00	
W. Sanderson.....	do.....do.....	60 00	
Jas. R. Stanley.....	do.....do.....	60 00	\$625 00
Aaron Harding.....	Laborer, pay-roll for September, 1861.....	60 00	
John Costin.....	do.....do.....	45 00	
Levi Neal.....	do.....do.....	45 00	
W. H. Smith.....	do.....do.....	45 00	
Wm. Twine.....	do.....do.....	45 00	
Alex'r Bruce.....	do.....do.....	45 00	
John Johnson.....	do.....do.....	45 00	
Levi Saunders.....	do.....do.....	45 00	
David Fisher.....	do.....do.....	45 00	
J. T. Chauncey.....	do.....do.....	45 00	465 00
John D. Thomson.....	Upholstering, restuffing, and covering with leather, 240 hall chairs, at \$7 each.....	1,680 00	
	Cleaning and varnishing 240 desks.....	600 00	
Ed. A. Lambert.....	20 gross Perry's double patent large barrel pens, \$70; 12 doz. glass inkstands, \$60.....		2,280 00
			130 00
S. R. Grayson.....	Washing 74 dozen towels for bath room.....		37 00
Ed. Ball.....	Expenses incurred by investigating committee of which Hon. C. H. Van Wyck is chairman, appointed July 8, 1861:		
	Amount paid sundry persons for stationery.....	43 00	
	Amount paid on account of necessary expenses of said committee, viz:		
	Hon. E. B. Washburne.....	270 60	
	W. S. Jackson.....	245 00	
	R. E. Fenton.....	176 00	
	W. G. Steele.....	46 00	
	H. L. Dawes.....	75 60	
	W. S. Holman.....	212 00	

Alexander Phillips.....		58 00	2,312 40
Nelson Joy.....		20 00	372 50
C. E. Lewis.....		120 00	
J. M. DeFranca.....		63 55	162 77
W. H. Eaton.....		146 00	
J. B. Burton.....		175 20	154 71
W. A. Groves.....		70 70	154 19
J. A. Rockraus.....		590 75	152 41
			139 03
			137 74
			136 13
T. W. Andrews, stenographer.....			
D. A. Stephens, messenger.....			
Hon. E. B. Washburne.....			
H. L. Dawes.....			
R. E. Fenton.....			
W. S. Holman.....			
W. G. Steele.....			
Edward Ball, Sergeant-at-arms.....			
Services in folding room of House of Representatives from August 1 to November 26, 1860, 149 days, at \$2 50.....			
Services as public folder in folding room of House of Representatives from February 20 to June 25, 1860, 126 days, at \$1 50.....		189 00	
Cr. By cash received.....		26 00	
Services as public folder in folding room of House of Representatives from February 15 to June 25, 1860, 131 days, at \$1 50.....		196 50	
Cr. By cash received.....		41 79	
Services as public folder in folding room of House of Representatives from February 15 to June 25, 1860, 131 days, at \$1 50.....		196 50	
Cr. By cash received.....		42 31	
Services as public folder in folding room of House of Representatives from February 20 to June 25, 1860, 126 days, at \$1 50.....		189 00	
Cr. By cash received.....		36 54	
Services as public folder in folding room of House of Representatives from February 15 to June 25, 1860, 131 days, at \$1 50.....		196 50	
Cr. By cash received.....		57 47	
Services as public folder in folding room of House of Representatives from February 20 to June 25, 1860, 126 days, at \$1 50.....		189 00	
Cr. By cash received.....		51 26	
Services as public folder in folding room of House of Representatives from February 15 to June 25, 1860, 92 days, at \$1 50.....		138 00	
Cr. By cash received.....		1 87	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. A. Bowen	Services as public folder in folding room of House of Representatives from February 18 to June 25, 1860, 128 days, at \$1 50	\$192 00	
	Cr. By cash received	70 34	
			\$126 66
John D. Thomson	Committee of Claims:		
	Removing furniture and laying old carpet	8 50	
	Varnishing 11 chairs, \$2 75; hanging 2 sets curtains, \$3	5 75	
	Varnishing 2 sofas and 2 bookcases, \$5; varnishing 1 cloak-rack, 50 cents	5 50	
	Varnishing washstands, \$1; varnishing large secretary, \$1	2 00	
	Varnishing large committee table	1 00	
	Committee on Agriculture:		
	Hanging 2 sets curtains	3 00	
	Varnishing 10 chairs, \$2 50; varnishing 1 bookcase, \$1	3 50	
	Varnishing 2 washstands, \$1; varnishing 1 secretary, \$1	2 00	
	Varnishing 3 sofas, \$3; varnishing 1 large committee table, \$1	4 00	
	Committee on Accounts:		
	Removing furniture, \$2; laying carpet, \$4	6 00	
	Hanging 2 sets curtains, \$3; varnishing 9 chairs, \$2 25	5 25	
	Varnishing 1 bookcase, \$1; varnishing 2 sofas, \$2	3 00	
	Varnishing 2 washstands, \$1; varnishing 1 committee table, \$1	2 00	
	Repairing bookcase	50	
	Committee on the Judiciary:		
	Removing furniture, \$4; thread and tacks, \$1	5 00	
	118 yards tapestry carpet, \$206 50; making the same, \$29 50	236 00	
	Hanging 3 sets curtains, \$4 50; varnishing 12 chairs, \$3	7 50	
	Varnishing 2 sofas, \$2; varnishing 1 committee table, \$1	3 00	
	Varnishing 1 bookcase, \$1; varnishing 1 cloak-rack and washstand, \$1 50	2 50	
	Committee on Public Lands:		
	93 yards tapestry carpet, \$162 75; removing furniture, \$2 50	165 25	
	Making carpet, \$22 75; thread and tacks, \$1	23 75	
	Hanging 4 sets curtains, \$6; varnishing 9 chairs, \$2 25	8 25	
	Varnishing 2 bookcases, \$2; varnishing 1 desk, 50 cents	2 50	

Edward Ball	Varnishing 1 sofa, \$1; varnishing 2 washstands, \$1.....	2 00
	Varnishing hat-rack, 50 cents; varnishing committee table, \$1.....	1 50
		509 25
	Expenses on account of investigating committee, consisting of Messrs. Van Wyck, Washburne, Holman, and others, from September 30 to October 11, 1861, viz:	
	Amount paid for witnesses summoned	86 30
	Amount paid to members of committee, stenographer, and messenger, and for stationery	657 14
	Amount of Edward Ball's bill for summoning witnesses and expenses.....	375 00
		1,118 54
N. Darling.....	Capitol police, compensation for October, 1861	72 50
A. K. Arnold	do.....do.....	45 83
S. J. Johnson	do.....do.....	45 83
J. A. Magee.....	do.....do.....	45 83
C. C. Casey	do.....do.....	45 83
J. W. Westfall	do.....do.....	45 83
D. A. Clayton	do.....do.....	45 83
J. B. Brown.....	do.....do.....	45 83
J. A. Wise.....	do.....do.....	45 83
George Garnett.....	do.....do.....	45 83
J. Vanderheyden	do.....do.....	45 83
J. Plant	do.....do.....	45 83
S. P. Blodgett.....	do.....do.....	45 83
A. Ritter	do.....do.....	45 83
S. N. Hilton	do.....do.....	45 83
A. Coburn	do.....do.....	45 83
J. W. Babson.....	do.....do.....	45 83
W. J. Belshaw	do.....do.....	33 33
		884 94
J. D. B. Littell	Folding documents, pay-roll for October, 1861	100 00
J. S. Read	do.....do.....	100 00
Samuel Quicksall	do.....do.....	100 00
J. S. Kellogg	do.....do.....	93 00
Nelson Joy	do.....do.....	93 00
J. R. Zimmerman	do.....do.....	77 50
A. B. McLain	do.....do.....	77 50
J. M. Shomo	do.....do.....	77 50
A. H. Walcott	do.....do.....	77 50
J. N. Henry	do.....do.....	77 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Wm. Cunningham	Folding documents, pay-roll for October, 1861	\$62 00	\$1,106 00
W. J. Harris	do.....do.....do	62 00	
Z Brown	do.....do.....do	62 00	
Levi Meily	do.....do.....do	46 50	
Henry A Carter	Folder, pay-roll for October, 1861	100 00	793 00
Elias T. Reed	do.....do.....do	100 00	
Geo. W. Martinett	do.....do.....do	100 00	
Geo. B. Wooldridge	do.....do.....do	100 00	
H. L. Hosmer	do.....do.....do	100 00	
Ezekiel Young	do.....do.....do	100 00	
Buel G. Wheeler	do.....do.....do	100 00	
W. T. Evans	do.....do.....do	46 50	
John F. Brandt	do.....do.....do	46 50	
L. W. Emmart	Engineer, pay-roll for October, 1861	125 00	635 00
J. H. Clements	do.....do.....do	100 00	
A. D. Nichols	do.....do.....do	100 00	
Jos. Mansfield	do.....do.....do	62 00	
John H. Barker	do.....do.....do	62 00	
John H. Garges	do.....do.....do	62 00	
Wm. Sanderson	do.....do.....do	62 00	
Jos. B. Stanley	do.....do.....do	62 00	
Aaron Harding	Laborer, pay-roll for October, 1861	62 00	
John Carter	do.....do.....do	46 50	
Levi Neal	do.....do.....do	46 50	
Wm. H. Smith	do.....do.....do	46 50	
Wm. Twine	do.....do.....do	46 50	
Alexander Bruce	do.....do.....do	46 50	
John Johnson	do.....do.....do	46 50	
Levi Saunders	do.....do.....do	46 50	

David Fisher.....	do.....do.....	46 50	480 50
John T. Chauncey.....	do.....do.....	46 50	150 00
John A. Miller.....	Services as temporary clerk, for October, 1861.....	.....	124 00
Robert Morris.....	Use of 2 horses and wagons, for October, 1861.....	.....	30 00
L. E. Straughn.....	Advertising for proposals for stationery, in the Cambridge (Md.) Intelligencer.....	.....	
Alexander & Cooke.....	Binding documents, 2d session 36th Congress, viz: 6,034 volumes Mordecai's Crimean Report, at 40 cents.....	2,413 60	
	28,014 volumes Patent Office Report, (Agricultural,) 1860, at 12 cents.....	3,361 68	
Alexander & Cooke.....	Binding documents, 2d session 36th Congress, viz: 13,966 volumes Mordecai's Crimean Report, at 40 cents.....	.....	5,775 28
E. R. Jewett.....	Lithographing and printing plates of the Report of Colonel R. Delafield, on the Art of War in Europe, viz: Plate No. 18, Defences of Toulon, 20,000 copies.....	375 00	5,586 40
	Plate No. 19, Harbor Defences, 20,000 copies.....	170 00	
	Fig. No. 182, Hospital at St. Petersburg, 20,000 copies.....	182 80	
	Fig. No. 183.....do.....do.....	182 80	
	Fig. No. 186, Turkish Barracks, 20,000 copies.....	182 80	
E. R. Jewett.....	449 copper-faced illustrations of machinery for the Patent Office Reports on Manu- factures, for 1861, at \$11 95 each.....	5,379 02	1,093 40
	Less 6 per cent.....	322 74	
A. Hoen & Co.....	Lithographing and printing maps of Coast Survey Report of 1860, viz: No. 2, 6,550 copies, at \$1 70 per 100.....	111 35	5,056 28
	16, 6,550 copies, at \$1 40 per 100.....	91 70	
	29, 6,550 copies, at \$2 44 per 100.....	159 82	
	38, 6,550 copies, at 93 cents per 100.....	60 91½	
	39, 6,550 copies, at 75 cents per 100.....	49 12½	
J. D. Thomson.....	1,485 yards Brussels carpet for hall, at \$1 85.....	2,747 25	472 91
	Making and fitting same, at 25 cents per yard.....	371 25	
	40 pieces carpet binding, at 50 cents.....	20 00	
	Binding 480 yards carpet, at 15 cents.....	72 00	
	Thread, tacks, &c.....	30 00	
	560 yards tapestry carpet for gallery, at \$1 75.....	980 00	
	Making and laying same, at 25 cents.....	140 00	
	Laying old carpet in gentlemen's gallery.....	40 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. D. Thomson—Continued	230 yards brass, and putting down, at 50 cents.....	\$115 00	
	6 gross brass screws, at \$1 25	7 50	
	35 yards velvet carpet for Speaker's stand.....	87 50	
	Making and laying same	8 75	
	70 yards oil cloth, and laying in hall and gallery, at \$1 50.....	105 00	
	Material, and remaking 1,329 feet cushions	531 60	
	244 feet new cushions for galleries, at 40 cents	366 00	\$5,621 85
Jas. B. Smith & Co	Binding the following documents of the 2d session 36th Congress, in sheep, viz:		
	470 copies Report of Committee of Claims, vol. 2, for Interior Department.....	235 00	
	255 copies Report of Committee of Claims, vol. 2, for members	127 50	
	67 copies Report of Committee of Claims, vol. 2, for executive departments.....	33 50	
	23 copies Report of Committee of Claims, vol. 2, for foreign legations	11 50	
	78 copies Report of Committee of Claims, vol. 2, for senators	39 00	
	8 copies Report of Committee of Claims, vol. 2, for United States mint, Congressional library, Court of Claims, and Naval and Military Academies	5 00	
	80 copies Reports of Committees, vols. 2 and 3, for State Department.....	40 00	
	40 copies Reports of Court of Claims, vol. 1, for State Department	20 00	
	Same, in calf, at 61 cents:		
	40 copies Reports of Court of Claims, vol. 2, at 61 cts., for House library and office.	24 40	
	1 copy Acts and Resolutions, 1st session 37th Congress.....	61	
	28 copies Reports of Court of Claims, for senators	17 08	
	Fitting and lettering 408 volumes books in the House library, at 25 cents.....	102 00	655 59
John C. Rives.....	Reporting and publishing in the Daily Globe the proceedings of the House of Representatives, from July 5 to August 7, 1861, 284 ³ / ₈ columns, at \$7 50		2,137 39
Geo. H. Chapman	Services as temporary clerk in the office of the House of Representatives during the month of September, 1861		150 00
Wm. Averill	Services as temporary clerk in the office of House of Representatives during September, 1861		150 00
Daniel McCook.....	Services as temporary clerk in the office of House of Representatives during September, 1861		150 00

Ira Goodnow.....	Services of horse and wagon from August 8 to October 1, 54 days, at \$2	108 00
J. W. Clayton.....	Horse and wagon for September.....	60 00
Robert Morris.....	do.....do.....	60 00
Gales & Seaton.....	Advertising in the "National Intelligencer" proposals for stationery	46 00
W. J. Murtagh & Co.....	Advertising in the "National Republican" proposals for stationery	46 00
W. D. Wallach.....	Advertising proposals for stationery in the "Evening Star"	46 00
L. J. Middleton.....	15 bushels of ice, at 50 cents.....	7 50
	8 bushels of ice, daily, from August 8 to September 30, 46 days, 368 bushels, at 50 cts.	184 00
		191 50
J. W. Thompson & Co	Furniture and repairs:	
	18 pounds solder, at 35 cents; plumber and assistant, 1 day, \$4	10 30
	Plumber and assistant, 2½ days, at \$4; bricklaying, 1 day, \$3.....	13 00
	Labor, 1 day.....	1 50
	Bricklayer, 2 days, at \$3; plumber and assistant, 3 days, at \$4.....	18 00
	Laborer, 1½ days, at \$1 50	2 25
	4 plumbers and assistants, 1 day, at \$4.....	16 00
	Bricklayer and laborer, 1 day.....	4 50
	One 4-light composition globe valve, hubs and ends	48 75
	37 feet 4½-inch cast iron heavy mains	21 09
	60 feet 2-inch wrought iron pipe, (steam,) at 55 cents.....	33 00
	14 feet cast iron branch, \$5; 24 feet sleeves and plugs, \$7.....	12 00
	100 pounds pig lead, at 8½ cents, \$8 50; 20 pounds caskets, at 12½ cents, \$2 50	11 00
	4 plumbers and assistants, 1 day.....	16 00
	Bricklayer and laborer, 1 day.....	4 50
	1 fancy enamelled washbasin	7 88
	Silver-plated composition cocks	7 50
	Plates, wastes, and chains.....	2 25
	4 brass basin joints, at 75 cents	3 00
	4 plumbers and assistants, 1 day, at \$4	16 00
	5 plumbers and assistants, night work, at \$4.....	20 00
	Bricklayer and laborer, 1 day.....	4 50
	Bricklayer and laborer, 1½ day, at \$4 50	6 75
	4 plumbers and assistants, 1 day, at \$4.....	16 00
	5 pounds putty, at 7 cents.....	35
	400 bricks, at \$1 05.....	4 20
	1½ barrel cement, and cartage	5 25
	Large iron man-hole cover	11 00
	4 plumbers, 1 day each, at \$4	16 00
	Bricklayer and laborer, 1 day.....	4 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. W. Thompson & Co—Continued ..	8 dozen Tripoli polishing powder, at 85 cents	\$6 80	
	1 large silver-plated basin	7 50	
	95 pounds sheet lead, at 12½ cents	11 88	
	3 wrought iron elbows, 1½ inch, at 40 cents	1 20	
	6 plumbers and assistants, 1 day each, at \$4	24 00	
	1 bricklayer and laborer, 1 day	4 50	
	2 cross screws, at 75 cents	1 50	
	8 pounds nails, at 6½ cents	50	
	5 plumbers and assistants, 1 day each, at \$4	20 00	
	1 bricklayer and laborer, 1 day	4 50	
	5 plumbers and assistants, 1 day each, at \$4	20 00	
	1 bricklayer and laborer, 1 day	4 50	
	3 14-inch fitting, at 40 cents, \$1 20; 2 1-inch ball corks, at \$2 75, \$5 50	6 70	
	3 pairs heavy brass hinges, at 75 cents	2 25	
	1 copper float	1 75	
	4 brass basin joints, at 75 cents	3 00	
	4 feet gas pipe, at 22 cents	88	
	1 pound lead pipe, at 12½ cents	12 50	
	2 plugs and chains	2 75	
	5 plumbers and assistants, 1 day each, at \$4	20 00	
	1 bricklayer and laborer, 1 day	4 50	
	5 plumbers and assistants, 1 day each, at \$4	20 00	
	1 bricklayer and laborer, 1 day	4 50	
	7 wrought iron fittings, at 30 cents	2 10	
	5 plumbers and assistants, 1 day, at \$4	20 00	
	1 2-inch steam fittings, \$1; 1 2-inch globe valve, \$12	13 00	
	1 silver-plated basin	7 50	
	1 laborer, 1 day	1 50	
	10 pounds solder, \$3 50; 6 pounds rosin, 48 cents	3 98	
	5 plumbers and assistants, 1 day, at \$4	20 00	
	35 pounds iron clamps and bolts, at 25 cents	8 75	
	2 feet 1-inch steam pipe	60	

Cutting 4 2-inch threads, at 40 cents.....	1 60
5 plumbers and assistants, 1 day, at \$4.....	20 00
150 pounds sheet lead, at 12½ cents.....	18 75
25 sheets of tin, at 30 cents.....	7 50
Iron cap and cover for box.....	1 75
5 plumbers and assistants, 1 day, at \$4.....	20 00
250 feet gas pipe and fitting, at 25 cents.....	62 50
Connecting to main cutting, out, &c.....	25 00
9 feet plated basin chains, at 40 cents.....	3 60
1 laborer, 2 days, at \$1 50.....	3 00
1 plumber and assistant, 5½ days, at \$4.....	22 00
1 plumber and assistant, 5 days, at \$4.....	20 00
1 laborer, 2 days, at \$1 50.....	3 00
40 feet 2-inch wrought iron steam pipe, at 55 cents.....	22 00
12 pounds solder, at 25 cents.....	4 20
Plumbers and assistants, 4 days, at \$4.....	16 00
Laborer, 1 day.....	1 50
6 pounds nails.....	37
42 blind caps, plugs and fittings.....	14 70
1 plumber and assistant, 5 days, at \$4.....	20 00
1 laborer, 2 days, at \$1 50.....	3 00
110 feet 2-inch wrought iron steam pipe, at 55 cents.....	60 50
1 2-inch globe valve, \$12; 1 blind plug, 88 cents.....	12 88
1 2-inch brass union, \$3 28; 20 blind caps, &c., \$9 10.....	12 38
110 pounds sheet lead, at 12½ cents.....	13 75
1 laborer, 5 days, at \$1 50.....	3 00
1 plumber and assistant, 4½ days, at \$4.....	18 00
1 2-inch brass union, \$3 25; 36 sheets tin, \$10 80.....	14 05
1 plumber and assistant, 4 days, at \$4.....	16 00
1 bricklayer, 1 day.....	3 00
1 plumber and assistant, 3 days, at \$4.....	12 00
1 laborer, 1 day.....	1 50
1 2-inch steam fitting, \$1; 1 2-inch brass reducer, \$1.....	2 00
1 plumber and assistant, 4 days, at \$4.....	16 00
1 laborer, 2 days, \$3; bricklayer, 1 day, \$3.....	6 00
1 1½-inch steam valve, \$6; 1 complex, \$1 12.....	7 12
6 mal. iron fitting, at 30 cents.....	1 80
1 plumber and assistant, 7 days, at \$4.....	28 00
Laborer, 2 days, \$3; bricklayer, 1 day, \$3.....	6 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. W. Thompson & Co—Continued ..	50 feet 5-inch cast iron pipe, at 60 cents.....	\$30 00	
	4 feet 5-inch fittings, at \$1 75.....	7 00	
	Iron cesspool and strap	4 50	
	Plumber and assistant, 6 days, at \$4	24 00	
	Laborer, 2 days, at \$1 50	3 00	
	Bricklayer, 1 day.....	3 00	
	Plumber and assistant, 5 days, at \$4	20 00	
	Bricklayer and laborer, one day.....	4 50	
	Plumber and assistant, 4 days, at \$4	16 00	
	18 sheets tin, 14 by 20, at 30 cents.....	5 40	
	6 pounds solder, at 35 cents.....	2 10	
	2 feet 5-inch iron branch, \$3 50; 1 iron F, \$3	3 80	
	Bricklayer, 1 day, \$3; laborer, 2 days, \$3.....	6 00	
	do.....do.....	6 00	
	Plumber and assistant, 4 days, at \$4	16 00	
	3 large staples, &c , for coils, at \$1	3 00	
	200 feet 3½-inch four-plug gum hose, at \$1 10.....	210 00	
	6 pairs couplings, bands and fittings, at \$6 87.....	41 25	
	1 3½-inch bushing and altering hose pipe	7 00	
	Repairing small hose.....	1 25	
	550 pounds cotton waste, and hauling, at 16 cents.....	88 00	
	Plumber and assistant, 4 days, at \$4.....	16 00	
	Bricklayer, 1 day, \$3; laborer, 2 days, \$1 50.....	6 00	
	Plumber and assistant, 6 days, at \$4	24 00	
	5 lbs. iron holdfasts, at 30 cents.....	1 50	
	2 papers tacks, 30 cents; 7 lbs. solder, at 35 cts , \$2 45.....	2 75	
	1 bricklayer and laborer, 1 day.....	4 00	
	18 sheets 14-20 tin, at 30 cts., \$5 40; 1 nipple, 50 cts.....	5 90	
	Plumber and assistant, 5 days, at \$4	20 00	
	Bricklayer and laborer, 2 days, at \$4 50.....	9 00	
	68 lbs. sheet lead, at 12½ cts.....	8 50	
	Plumber and assistant, 6 days, at \$4	24 00	

8 bolts and nuts, at 30 cts, \$2 40; 1 force pump, complete, \$23.....	25 40
1 1½-inch steam valve, \$5 50; 1 1-inch hose cock, \$4.....	9 50
4 lbs. nails, 25 cts.; plumber and assistant, 6 days, at \$4.....	24 25
Bricklayer and laborer, 1 day, \$4 50; pump boards, \$2.....	6 50
18 sheets 14-20 tin, at 30 cts., \$5 40; 4½ lbs. block tin, at 45 cts, \$2.....	7 40
2 feet 2-inch steam pipe, at 40 cents.....	1 60
Plumber and assistant, 5 days, at \$4.....	20 00
Bricklayer, 1 day, \$3; 2 feet gas pipe, 60 cts.; plug and fitting, 30 cts.....	3 90
Plumber and assistant, 5 days, \$20; bricklayer, 1 day, \$3.....	23 00
90 lbs. lead pipe, at 12½ cts., \$11 25; 3 lbs. block tin, \$1 35; 5 lbs. putty, 28 cts.....	12 88
2 Bulforshire, \$16; 1 leather, \$1.....	17 00
Pair 1-inch hose, \$1 25; copper vessels, 18 cents.....	1 43
20 feet 1½-inch wrought iron steam pipe, at 40 cents.....	8 00
Plumber and assistant, 5 days, \$20; bricklayer, 1 day, \$3.....	23 00
2 pairs steel tongs, \$9; 1 large tongs, \$2 75.....	11 75
Plumber and assistant, 5 days, \$20; bricklayer, 1 day, \$3.....	23 00
Laborer, 1 day, \$1 50; 2½ gallons boiled oil, \$3 13.....	4 63
58½ lbs. solder, at 35 cts., \$20 47; 1 8-inch copper float, \$2 25.....	22 72
1 ampblack and glue, \$1 25; bricklayer, 1 day, \$3.....	4 25
Plumber and assistant, 10 days, \$40; bricklayer, 1 day, \$3.....	43 00
35 feet 1-inch wire rope, at 45 cts., \$15 75; 35 lbs. solder, at 35 cts., \$12 25.....	28 00
Plumber and assistant, 5 days, \$20; bricklayer, 1 day, \$3.....	23 00
6 small iron fittings, at 30 cts., \$1 80; 1 foot 1½-inch steam pipe, 40 cts.....	2 20
Relaying old pipe, \$2 75; plumber and assistant, 5 days, \$20.....	22 75
9 lbs. putty, 56 cts.; 1 bolt and nut, 30 cts.....	86
Repairing 200 feet old hose, \$8 75; plumber and assistant, 5 days, \$20.....	28 75
Bricklayer and laborer, 1 day, \$4 50; silver-plated bowls, \$13 50; leather, 75 cts.....	18 75
40 lbs. red lead cement, at 15 cts., \$6; plumber and assistant, 6½ days, at \$4, \$26.....	32 00
Bricklayer and laborer, 1 day.....	4 50
87 lbs. copper gutters for roof, at 60 cents.....	52 20
7 lbs. solder, at 35 cts., \$2 45; 12 brass basin joints, at 75 cts, \$9.....	11 45
Plumber and assistant, 6 days, \$24; bricklayer and laborer, 1 day, \$4 50.....	28 50
9 lbs. putty, 56 cts.; plumber and assistant, 12 days, \$48.....	48 56
134 feet steam pipe, at 30 cts.....	40 20
Plumber and assistant, 4½ days, \$18; cartage of tools, \$1.....	19 00

\$2,408 57

730 60

244 00

Amount paid for investigating committee, of which Hon. J. F. Potter is chairman.....

Expenses incurred by him as chairman of the commission authorized to examine and report as to the compensation of all officers of the government.....

Edward Ball.....

John Sherman.....

To whom paid.	For what object.	Amount.	Total.
E. R. Jewett	Printing 20,000 copies of thirty-four illustrations of machinery for gun-carriages, &c., for Major Mordecai's Report on the Art of War in Europe, ordered by the House, 2d session 36th Congress.....	.....	\$5,029 73
E. R. Jewett	Lithographing and printing maps to accompany the report of Colonel R. Delafield on the Art of War in Europe, viz: Plate 3, Fortifications in Paris, 20,000 copies..... Fig. 78, Transport of Wounded, 20,000 copies..... Fig. 79.....do.....do.....	\$2,000 00 182 80 182 80	
John D. Thomson.....	Committee on the Post Office and Post Roads: Laying carpet and removing furniture..... Hanging curtains, \$4 50; varnishing 2 tables in committee room, \$2..... Varnishing 2 sofas, \$2; 9 chairs, \$2 25; 1 secretary, \$1; washstand, 50 cts.; bookcase, \$1; hat-rack, 50 cents..... Committee on Public Expenditures: 141 yards tapestry carpeting, \$246 75; thread, \$1; making and laying same, \$35 25. Removing furniture..... Varnishing 1 committee table, \$1; 6 chairs, \$1 50; 2 stands, \$1; 1 bookcase, \$1 50; 2 sofas, \$2..... Committee on Invalid Pensions: Laying old carpet, \$4; removing furniture, \$3 50..... Hanging three sets curtains, \$4 50; varnishing, \$1..... Varnishing 1 bookcase, \$1; 1 desk, 75 cents; 2 washstands, \$1; 1 hat-rack, 50 cts.... Varnishing 1 committee table, \$1; 8 chairs, \$2; 1 sofa, \$1..... Committee on Roads and Canals: Laying old carpet, \$4; removing furniture, \$3..... Hanging curtains, 2 sets..... Varnishing 1 secretary, \$1; 2 bookcases, \$2; 12 chairs, \$3..... Varnishing 2 washstands, \$1; 1 hat-rack, 50 cents..... Committee for the District of Columbia: 101 yards tapestry carpet, \$176 75; thread, \$1; making and laying, \$25 25..... Removing furniture.....	9 00 6 50 7 25 283 00 3 00 7 00 7 50 5 50 3 25 4 00 7 00 2 00 6 00 1 50 203 00 3 00	2,365 60

James B. Smith & Co	Varnishing committee table, \$1; 9 chairs, \$2 25; 1 bookcase, \$1	4 25	563 75
	Varnishing 1 washstand, 50 cents; 1 hat-rack, 50 cents	1 00	
	Binding documents, 2d session 36th Congress, in sheep, viz:		
	470 copies Ex. Doc, volumes 1 and 2, at 50 cents, Interior Department	470 00	
	255 copies Ex. Doc., volumes 1 and 2, at 50 cents, members House Representatives ..	255 00	
	67 copies Ex. Doc., volumes 1 and 2, at 50 cents, executive departments	67 00	
	23 copies Ex. Doc., volumes 1 and 2, at 50 cents, foreign legations	23 00	
	78 copies Ex. Doc., volume 2, at 50 cents, Senate	39 00	
	For fitting and lettering the following books in the House library:		
	305 volumes to September 28, 1861, at 25 cents	76 25	
	312 volumes to October 5, 1861, at 25 cents	78 00	
	297 volumes to October 12, 1861, at 25 cents	74 25	
	284 volumes to October 19, 1861, at 25 cents	71 00	
	279 volumes to October 26, 1861, at 25 cents	69 75	
	302 volumes to November 2, 1861, at 25 cents	75 50	
	2 copies House Journal, at 50 cents, office House Representatives	1 00	1,299 75
J. D. Defrees	For ruling, faint and red, 500 Abstracts of Disbursements, at 50 cents	2 50	
	For ruling, faint and red, 500 Pay-rolls, at 50 cents	2 50	
	For ruling, faint and red, 1,000 blank summonses, at 25 cents	2 50	
	For binding 1,000 Douglas Eulogies in cloth, at 13 cents	130 00	
	For binding 19,000 Douglas Eulogies in paper, at 3 cents	570 00	
	Ruling, faint and red, 500 Accounts Current, at 50 cents	2 50	
	Less 15 per cent	710 00	
		106 50	603 50
E. R. Jewett	Lithographing and printing maps and plates for Report of Colonel R. Delafield on the Crimean War, viz:		
	Plate No. 8, 20,000 copies, map Sebastopol	1,400 00	
	Plate No. 12, 20,000 copies, map Theatre of War	450 00	
	20,000 copies title page to report	300 00	
			2,150 00
J. B. Smith & Co	71 reams Manilla paper, 19 by 24, at \$2 24	170 24	
	256 reams Manilla paper, 12 by 19, at \$1 20	307 20	
			477 44
A. R. Parker	Draughtsman on land map, for June, 1861		180 00
Levi Bartholomew	Temporary clerk, House of Representatives, at \$1,800 per annum, for Oct., 1861		150 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
George H. Chapman.....	Temporary clerk, House of Representatives, for October, 1861.....	-----	\$150 00
George H. Chapman.....	Same, for November, 1861.....	-----	150 00
Stiles Gray.....	4 horses and carriages for House post office, for October, 31 days, at \$2 each.....	-----	248 00
J. W. Clayton.....	Horse and wagon, for October.....	-----	62 00
W. J. Ketchum.....	Winding clocks, September and October, 1861.....	\$40 00	
	Repairing clock in old hall.....	7 00	
		-----	47 00
J. A. Meaker.....	Washing 72½ dozen towels, at 50 cents, for October, 1861.....	-----	36 30
J. W. Fitzhugh.....	Repairing 2 doors, \$1 50; 2 brass hooks, \$1.....	2 50	
	Repairing 1 sofa, \$1 50; 8 knobs, \$2.....	3 50	
	Lumber and staging, \$10; 1 enameled ———, \$3 50.....	13 50	
	1 hook, 50 cents; 500 file-sticks, \$25.....	25 50	
	Repairing chair, 50 cents; repairing 10 doors, \$5.....	5 50	
	1 key and repairing door, \$1 50; 2 bolts, \$1 50.....	3 00	
	Map handle, 50 cents; repairing 4 doors, \$2.....	2 50	
	1 lock, \$2 50; repairing 2 doors, \$1; 5 pounds soda, \$1 25.....	4 75	
	2 brushes, \$1 50; 1 wood hod, \$2; 2 paint brushes, \$2; 2 pounds litharge, \$1.....	6 50	
	1 hatchet, \$1 25; repairing hall door, 50 cents.....	1 75	
	Covering table, stationery room.....	18 00	
	Covering committee table, Post Office and Post Roads.....	10 00	
	Covering 4 tables, room 55.....	40 00	
	Covering 2 tables, rooms 56 and 57.....	20 00	
	Repairing 15 hall doors.....	15 00	
	Repairing Speaker's chair.....	15 00	
	3 carpenters, 6 days each, at \$2 25.....	40 50	
	Whitening walls committee room.....	4 00	
	2 locks on closet, \$2; 1 large mat, \$3.....	5 00	
	2 large enameled gas for ceiling.....	32 00	
	150 feet shelving for library, at 8 cents.....	12 00	
	1 brass carpet sill, \$2 50; 30 yards cocoa matting for folding room, \$22 50.....	25 00	
	Sewing and laying matting.....	6 00	
	4 yards oil-cloth, \$5; repairing sofa, \$1 50.....	6 50	

	Hanging curtains, \$2; 4 dozen towels, \$26.....	28 00	
	4 dozen large towels.....	26 00	
	16 yards cocoa matting, engineer's room.....	12 00	
	Sewing and laying same.....	3 20	
	Covering table with cloth, document room.....	8 00	
	Covering Speaker's desk with cloth.....	4 50	
	40 yards cocoa matting, post office.....	30 00	
	Sewing and laying same.....	8 00	
	1 dozen goblets, \$5 50; 3 mats, \$9.....	14 50	
	1 large water-cooler, \$15; 1 ice pitcher, \$8.....	23 00	
	6 revolving chairs, post office, \$90; repairing shade, \$1.....	91 00	
	6 yards oil-cloth, \$9; hinges and covering door, \$7 50.....	16 50	574 70
John P. Hale	For disbursements made by him as chairman of committee of inquiry as to the abandoning and burning of the Norfolk navy yard, August 6, 1861.....	-----	715 80
A. Hoen & Co.....	Lithographing and printing map for the Coast Survey Report, 1860: Map No. 8, printing 6,550 copies, at \$1 60 per 100.....	104 80	
	do.....13.....do.....1 51.....do.....	98 90	
	do.....25.....do.....1 55.....do.....	101 52	305 23
E. R. Jewett.....	Lithographing and printing map for Colonel Delafield's Report: Plate No. 11, 20,000 copies Harbor of Sebastopol.....	1,200 00	
	Plate No. 42, 20,000 copies Arsenal at Vienna.....	695 00	1,895 00
J. & R. Kingsland.....	For 41,520 pounds map paper for 20,000 copies of maps, &c., for Mordecai's and Delafield's Reports, at 17½ cents.....	7,162 20	
	18,646 pounds map paper for 6,550 copies of map for the Coast Survey Report for 1860, at 17½ cents per pound.....	3,216 43	
	448 pounds map paper for 1,550 copies of 8 panoramic views for Ives's Colorado Report, at 17½ cents.....	77 28	
	180 pounds map paper for 1,550 copies of 2 maps for Ives's Colorado Report, at 17½ cents per pound.....	31 05	10,486 96
N. Darling.....	Capitol police, compensation for November, 1861.....	72 50	
Robert Strong.....	do.....do.....	45 83	
S. J. Johnson.....	do.....do.....	45 83	
J. A. Magee.....	do.....do.....	45 83	
C. C. Carey.....	do.....do.....	45 83	
S. C. Wailes.....	do.....do.....	45 83	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. W. Westfall	Capitol police, compensation for November, 1861	\$45 83	
D. A. Clayton	do	45 83	
J. B. Brown	do	45 83	
J. A. Wise	do	45 83	
G. Garnett	do	45 83	
J. Vanderheyden	do	45 83	
J. Plant	do	45 83	
S. A. Hilton	do	45 83	
W. J. Belshaw	do	33 33	
S. P. Blodgett	do	45 83	
A. Ritter	do	45 83	
A. Coburn	do	45 83	
J. W. Babson	do	45 83	
			\$884 94
J. B. Smith & Co	Binding following documents, 2d session 36th Congress, at 50 cents per volume: 470 copies Executive Documents, volumes 3 and 4, for Interior Department..... 255.....do.....do.....for members..... 67.....do.....do.....for executive departments..... 23.....do.....do.....for foreign legations..... 78.....do.....do.....for senators..... 4.....do.....do.....do 1, 2, 3 & 4, for mint..... 2.....do.....do.....do.....for Court of Claims..... 2.....do.....do.....do.....for Congressional Library..... 2.....do.....do.....do.....for Naval and Military Academy..... Same in calf: 30 copies Executive Documents, vols. 1, 2, 3 and 4, 120 vols., at 61 cts., for House of Reps 10.....do.....do.....do.....40 vols., at 61 cts., for Chief Clerk - 28.....do.....do.....do.....do.....for Senate..... For titling and lettering following books in library House of Representatives: 300 volumes to November 9, at 25 cents..... .....do.....do.....16.....do.....	470 00 255 00 67 00 23 00 78 00 8 00 4 00 4 00 4 00 73 20 24 00 68 32 75 00 75 00	
			1,228 92

Alexander & Cooke.....	Binding the following documents, 2d session 36th Congress:		
	29 volumes abstracted Indian bonds, at 12 cents.....	3 48	
	1,587 volumes Commerce and Navigation, 1860, at 12 cents.....	190 44	
	30 volumes Message and Documents, abridged, 2d session 36th Congress.....	3 60	
	145 volumes Message and Documents, part 3.....	17 40	
	490 volumes Mechanical Patent Reports, 1859, part 1, 2d session 36th Congress.....	58 80	
	39 volumes Finance Report, 1860, 2d session 36th Congress.....	4 68	
	805 Agricultural Reports, 1859, 1st session 36th Congress.....	96 60	375 00
J. D. B. Littell.....	Folding documents.....	100 00	
Jos. Reed.....	do.....	100 00	
Sam'l Quicksall.....	do.....	100 00	
J. R. Zimmerman.....	do.....	75 00	
A. B. McLain.....	do.....	75 00	
J. M. Shorno.....	do.....	75 00	
A. H. Walcott.....	do.....	75 00	
J. H. Hersey.....	do.....	75 00	
Nelson Joy.....	do.....	90 00	
J. S. Kellogg.....	do.....	90 00	
Zach. Brown.....	do.....	60 00	
W. J. Harris.....	do.....	60 00	
Wm. Cunningham.....	do.....	60 00	
Levi Meiley.....	do.....	45 00	1,080 00
L. W. Emmart.....	Engineer, pay-roll for November, 1861.....	125 00	
J. W. Clements.....	do.....	100 00	
A. D. Nichols.....	do.....	100 00	
Jos. Mansfield.....	do.....	60 00	
John H. Barker.....	do.....	60 00	
John H. Garges.....	do.....	60 00	
Wm. Sanderson.....	do.....	60 00	
Joseph B. Stanley.....	do.....	60 00	625 00
Henry N. Carter.....	Folding documents.....	100 00	
E. S. Reed.....	do.....	100 00	
Geo. W. Martenet.....	do.....	100 00	
Adam Worthman.....	do.....	100 00	
H. L. Hosmer.....	do.....	100 00	
Ezekiel Young.....	do.....	100 00	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
B. G. Wheeler	Folding documents	\$100 00	
W. T. Evans	do	45 00	
John F. Brandt	do	45 00	\$790 00
Aaron Harding	Laborer, pay-roll for November, 1861	60 00	
John Costin	do	45 00	
Levi Neal	do	45 00	
W. H. Smith	do	45 00	
W. Twine	do	45 00	
Alexander Bruce	do	45 00	
John Johnson	do	45 00	
Lewis Saunders	do	45 00	
David Fisher	do	45 00	
J. T. Chauncey	do	45 00	465 00
Henry Schreiner	Temporary mail boy, pay-roll for November, 1861	50 00	
J. H. Renshaw	do	50 00	100 00
McAllister & Brother	24 box wood thermometers	48 00	
	do	3 50	51 50
W. T. Dove	Bath room, 20 pounds solder, at 35 cents	7 00	
	4 day, plumber and assistant	2 00	
	1 day, plumber and assistant	4 00	
	1 day, gas fitter and assistant	4 00	
Robert Morris	2 horses and wagons, for December, 1861		17 00
J. W. Clayton	1 horse and wagon, for December, 1861		124 00
Ira Goodnow	1 horse and wagon, for December, 1861		62 00
Ira Goodnow	1 saddle horse, for December, 1861		62 00
J. H. Hobbs	Clerk to Judiciary Committee, from December 2 to December 31, 1861		45 00
Silas W. Gillett	Services as clerk to the Committee on Invalid Pensions, from 10th to 31st Dec. 1861		120 00
			52 00

Charles Lanman.....	Services in the Clerk's office, for December, 1861.....	150 00
J. R. Hood.....	Services as temporary clerk in office House of Representatives, for December, 1861.....	125 00
John D. Thomson.....	$\frac{1}{2}$ gross brown Windsor soap.....	9 00
	1 slop-tub.....	2 00
	Marking pot and paint.....	1 00
	50 packing boxes.....	125 00
	60 dozen paste brushes, \$24; 1 gross matches, \$6.....	30 00
	7 packing boxes, \$17 50; 6 mouse traps, \$1 50.....	19 00
	1 gallon turpentine, \$3 50; 12 shoe knives, \$3.....	6 50
	1 dozen paste brushes, \$4; 1 gross screws, \$2.....	6 00
	3 brushes, \$2; 1 pan, 50 cents; stove-polish, 50 cents.....	3 00
	18 large files, engineer's room, \$15; 12 tin buckets, \$24.....	39 00
	36 japanned dust pans, \$27; 36 painted water buckets, \$22 50.....	49 50
	27 cedar buckets, \$54; 100 whisp brooms, \$37 50.....	91 50
	100 gross matches, \$60; 100 gross matches, \$54 16.....	114 16
	150 pounds sperm candles, \$90; 100 pounds soda, \$8.....	98 00
	200 pounds brown soap, \$20; 50 pounds Castile soap, \$18 75.....	38 75
	10 dozen chamois skins, \$150; 1 dozen brass candlesticks, \$9.....	159 00
	2 dozen soap trays, \$12; 2 gross tacks, \$6.....	18 00
	4 flesh brushes, \$6; 2 ice pitchers, \$6.....	12 00
	150 spittoons, \$131 25; 24 ice pitchers, \$36.....	167 25
	12 W. waste buckets, \$27; 1 brace and bits, \$3.....	30 00
	6 dozen fine towels, \$39; 24 large mats, \$60.....	99 00
	12 fancy Adelaide mats, \$27.....	27 00
	6 extra cocoa mats.....	27 00
	1 flexible gas tube, for post office.....	8 50
		1,180 16
Hudson Taylor.....	12 boxes pens, \$3 72; 12 boxes Rhodes's pens, \$4 20.....	7 92
	4 gross Washington pens, \$6; 7 boxes Perry's pens, \$5 25.....	11 25
	3 boxes Perry's pens, \$3 75; 2 boxes pens, No. 2, \$1 50.....	5 25
	3 boxes commercial pens, \$1 50; 10 reams cap paper, \$45.....	46 50
	15 reams note paper, \$33 75; 5 reams note paper, gilt, \$13 75.....	47 50
	5 pounds rubber, \$7 50; 12 boxes pencils, \$6.....	13 50
	3 gross pencils, \$22 50; 1 gross pencils, \$6.....	28 50
	6 rolls tape, \$9; 6 rolls narrow tape, \$7 50.....	16 50
	24 dozen tape, \$6; 12 dozen rubber pencils, \$72.....	78 00
	5 reams legal paper, \$32 50; 2 dozen folders, \$12.....	44 50
	12 bronze inkstands, \$39; 1 dozen gold pens, \$33.....	72 00
	1 dozen gold pens, \$30; 1 dozen gold pens, \$36.....	66 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Hudson Taylor—Continued	1 dozen gold pens, \$24; 1 dozen large gold pens, \$42.....	\$66 00	
	1 dozen small gold pens, \$42; 1 dozen small gold pens, \$27.....	69 00	
	12 boxes fancy note paper, \$9; 4 boxes fancy note paper, \$4.....	13 00	
	2 boxes note paper, \$1 50; 2 boxes buff note paper, \$2.....	3 50	
	16 boxes fancy envelopes, \$8; 6 gold and rubber pencils, \$27.....	35 00	
	1 gold case, \$9 50; 1 gold case, \$10 50	20 00	
	1 gold case, \$13; 2 gold cases, \$17.....	30 00	
	1 gold case, \$11 50; 20 M letter envelopes, \$50.....	61 50	
	2 dozen bottles mucilage, \$8; 2 dozen small bottles mucilage, \$5 50.....	13 50	
	5 reams plain cap paper, \$16 25; 1 dozen paper knives, \$11 50.....	27 75	
	3½ dozen pearl knives, \$38 50; 5 dozen large bottles red ink, \$25.....	63 50	
	8 dozen taste, \$28; 12 dozen braid, \$18	46 00	
	100 boxes sand, \$4; 5 dozen bottles mucilage, \$20.....	24 00	
	5 dozen small bottles mucilage	13 75	
	1 dozen gold pens, \$15; 1 dozen shell knives, \$19.....	34 00	
	1 dozen small pearl knives, \$11; ½ dozen folding knives, \$7 50.....	18 50	
	½ dozen 2-blade knives, \$7; 24 dozen braid, \$36	43 00	
	5 reams gilt letter paper, \$22 50; 5 reams note paper, \$13 75.....	36 25	
	5 reams ruled note paper, \$13 75; 1½ dozen penknives, \$30	43 75	
	1 dozen penknives, \$17; 1 dozen penknives, \$26	43 00	
	1 dozen penknives.....	15 00	
	1 dozen penknives, \$26; ½ dozen penknives, \$8 50	34 50	
	½ dozen penknives, \$15 50; ½ dozen penknives, \$16 50.....	32 00	
	½ dozen penknives, \$14 75; ½ dozen penknives, \$9 75.....	24 50	
	½ dozen penknives, \$15; ½ dozen penknives, \$16 50	31 50	
	½ dozen penknives, \$8; ½ dozen penknives, \$7 50	15 50	
	½ dozen penknives, \$8 75; ½ dozen penknives, \$9 75.....	18 50	
	½ dozen penknives, \$11 25; ½ dozen penknives, \$9 25.....	21 00	
	½ dozen penknives, \$12; ½ dozen penknives, \$14 50	26 50	
	½ dozen penknives, \$14; ½ dozen penknives, \$12	26 00	
	½ dozen penknives, \$13; 5 penknives, \$8 10	23 10	
	½ dozen penknives, \$16 50; ½ dozen penknives, \$7	23 50	

J. B. Smith & Co.....	
Em. Etheridge	
L. J. Middleton	
Wm. Smith.....	

1 dozen penknives, \$15; 1 dozen penknives, \$11 25.....	26 25
1 dozen penknives, \$12; 1 dozen penknives, \$15.....	27 00
2 dozen flat inkstands, \$15; 2 ⁷ / ₈ dozen flat inkstands, \$21 96.....	36 96
1 ¹ / ₂ dozen knives, \$14; 150 packages of tape, \$75.....	89 00
2 travelling cases, \$19; 2 travelling cases, \$17.....	36 00
2 travelling cases, \$15; 3 dozen rubber pencils, \$16 50.....	31 50
1 ¹ / ₂ dozen heavy pencils, \$14 38; 1 dozen heavy pencils, \$9 50.....	23 88
1 dozen heavy pencils, \$7 50; 2 reams thin letter paper, \$7 50.....	15 00
1 ream commercial letter paper, \$4 25; 2 reams plain comm'r'l letter paper, \$4 50.....	8 75
5 reams large note paper, \$12 50; 5 reams small note paper, \$10.....	22 50
4 dozen pencil sharpeners, \$5; 1 blank book, \$3 75.....	8 75
10 reams foolscap paper, \$45; 6 pounds black wax, \$9.....	54 00
5 reams note paper, \$13 75; 30 reams cap paper, \$135.....	148 75
10 reams thick law cap paper, \$65; 10 dozen folders, \$60.....	125 00
25 gross steel pens, \$18 75; 6 blank books, \$4 50; 1 blank book, \$3 25.....	26 00

\$2,077 24

Binding the following documents, 2d session 36th Congress, in sheep, at 50 cents:

 255 copies Executive Documents, volume 6, for members
 67 do do do do executive departments
 23 do do do do foreign legations
 78 do do do do senators
 4 do do do do United States mint
 2 do do do do Court of Claims
 2 do do do do library of Congress
 2 do do do do Military and Naval Academies
 Same, in calf:

 30 copies Executive Documents, volume 8, for House library
 10 do do do do Clerk's office
 28 do do do do senators
 For titling and patching the following books:

 300 volumes, November 30.....
 309 volumes, December 7.....
 228 binder's board boxes, labelled for the House Journal, sent to governors of States, at 61 cents.....

 127 50
 33 50
 11 50
 39 00
 2 00
 1 00
 1 00
 1 00
 18 30
 6 10
 17 08
 75 00
 77 25
 139 08

	549 31
	254 75
	188 00
	1 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
A. H. Burnham	Newspaper account, 1st session 37th Congress.....	-----	\$50 00
J. H. Richards	“Independent” for:	-----	
	Hon. D. C. Leach	\$0 95	
	Charles Case	3 00	
	Ed. Wade	3 00	
	H. G. Clarke	95	
	J. M. Ashley	95	
	R. McKnight	3 00	
	H. L. Dawes	50	
W. B. Lord	Travel as secretary of the commission on compensation and expenditures, appointed under act of Congress of July 31, 1861, from New York city to Mansfield, Ohio, 608 miles, and from Washington to Mansfield, Ohio, 663 miles, by order of the commissioners—making a total of 1,271 miles, at 10 cents per mile.....	-----	11 75
A. H. Burnham	Stationery, 1st session 37th Congress	-----	127 10
Stiles Gray	Cartage: 342 loads of documents.....	-----	25 00
J. D. Ward	Services in the old hall of the House of Representatives, from August 7 to December 9, 1861, 125 days	-----	171 00
Thomas H. Stockton	Chaplain, for December, 1861.....	-----	375 00
J. B. Smith & Co.....	Binding the following documents, 2d session 36th Congress, in sheep, viz: 470 copies Ex. Docs., vols. 6, 8, and 9, 1,410 volumes, for Interior Department.....	-----	62 50
	255...do.....do.....8, for House of Representatives	705 00	
	67...do.....do.....8 and 9, 134 volumes, for executive departments	127 50	
	23...do.....do.....8 and 9, 46 volumes, for foreign legations.....	67 00	
	78...do.....do.....8 and 9, 156 volumes, for Secretaries	23 00	
	4...do.....do.....9 and 10, 8 volumes, for United States mint.....	78 00	
	2...do.....do.....9 and 10, 4 volumes, for chief clerk's office.....	4 00	
	2...do.....do.....9 and 10, 4 volumes, for congressional library	2 00	
	2...do.....do.....9 and 10, 4 volumes, for Naval and Military Academies..	2 00	
	Same, in calf, at 61 cents:		
	30 copies Ex. Docs., volumes 9 and 10, 60 volumes, House library.....	36 60	
	10 copies Ex. Docs., volumes 9 and 10, 20 volumes, office House of Representatives...	12 20	

J. B. Smith & Co.....	28 copies Ex. Docs., volumes 9 and 10, 56 volumes, senators.....	34 16
	Titling and lettering 337 volumes, House library.....	84 25
	Indexing 1 committee book.....	1 25
		1,178 96
	Binding the following documents, 2d session 36th Congress, in sheep:	
	470 copies Ex. Docs., volume 10, Interior Department.....	235 00
	255 copies Ex. Docs., volume 9, members House of Representatives.....	127 50
	Titling and lettering 336 volumes, House library.....	84 00
		446 50
Hudson Taylor.....	1 large full bound ledger.....	12 50
	1 blank book.....	4 75
	1 6-quire blank book.....	1 75
		19 00
J. W. Fitzhugh.....	Repairing matting in hall.....	15 00
	135 desk and drawer keys.....	67 50
	85 brass door keys.....	85 00
	56 desk locks and keys.....	112 00
	130 casters.....	97 50
	29 patent spring hinges.....	87 00
	Repairing 12 spring hinges.....	3 00
	Repairing 19 desks.....	14 25
	Repairing 34 desks.....	17 00
	Repairing 56 desks.....	14 00
	Carpenter's work in closets.....	6 00
	Repairing hall door, 50 cents; 1 door bolt, \$1 25.....	1 75
	1 wood spittoon, 50 cents; shelving, \$5.....	5 50
	Repairing lock in storeroom 50 cents; and door, 50 cents.....	1 00
	Repairing shade, 50 cents; and door, 75 cents.....	1 25
	1 dozen tags, 60 cents; 6 hands, 4 days each in hall, at \$1 75 each, \$42; superin- tendent, 4 days, at \$3.....	54 60
	Hauling 16 loads furniture from Parkers', at \$1 50.....	24 00
	Shelves in library, \$2 50; repairing chair, 50 cents.....	3 00
	Repairing door, 75 cents; 370 feet carpet sill, at 15 cents, \$55 50.....	56 25
	5 laborers, 4 days each, at \$1 50.....	30 00
	Superintendent, 4 days.....	12 00
	Carpenter's work in closets.....	5 00
	Do.....do.....	10 00
	Carpenter's work in folding room.....	2 50
	4 dozen porcelain knobs for doors.....	10 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
J. W. Fitzhugh—Continued.....	1 door plate, \$1; drilling 32 holes in iron jambs, \$16; 32 iron hooks, \$24.....	\$41 00	
	1 map handle, \$1; repairing committee table, \$4.....	5 00	
	1 key to iron safe, \$2; 6 rat traps, \$6.....	8 00	
	6 mouse traps, \$1 50; repairing gallery door, \$2.....	3 50	
	8 brass hooks for lobby doors.....	4 00	
			\$796 60
Robert Morris.....	Services of two horses and wagons, for November, 1861.....	-----	120 00
J. W. Clayton.....	Horse and wagon, for November, 1861.....	-----	60 00
Ira Goodnow.....	Horse and wagon, for October and November, 1861.....	-----	122 00
Stiles Gray.....	Four horses and wagons, for November, 1861.....	-----	240 00
Walter McMichael.....	Temporary clerk, for the months of August, September, October, and Nov., 1861.....	-----	600 00
William Averill.....	Temporary clerk, for October and November, 1861.....	-----	300 00
J. A. Miller.....	Temporary clerk, for November, 1861.....	-----	150 00
D. McCook.....	do.....do.....do.....	-----	150 00
Levi Bartholomew.....	do.....do.....do.....	-----	150 00
E. Churchill.....	Washing 81½ dozen towels for bath rooms.....	-----	40 75
Edward Ball.....	Moneys expended for investigating committees, consisting of Van Wyck, Washburne, Holman, and others, from October 11 to November 10, 1861:	-----	
	Paid fees to witnesses.....	148 25	
	Paid at St. Louis for telegraphs sent by committee.....	34 70	
	Paid Can Blythe, St. Louis, for stationery.....	17 70	
	Paid J. J. Weitzig, messenger.....	22 00	
	Paid J. Buckminster for paper.....	2 65	
	Paid Barnum & Fogg, St. Louis, for rooms, fires, gas, &c., for committee.....	20 00	
	Paid M. S. Holman for expenses, as per voucher No. 5.....	161 98	
	Paid T. F. Andrews's account.....	103 42	
	Paid E. B. Washburne.....	128 00	
	Paid for stationery.....	3 45	
	Paid E. Ball necessary travelling and other expenses attending the committee, and for fees and compensation for summoning witnesses before the committee at St. Louis, Cairo, and Chicago.....	573 40	
			1,215 55

J. B. Smith & Co.....	Binding documents, 2d session 36th Congress:		
	470 copies Ex. Doc., volume 5, at 50 cents, Interior Department	235 00	
	255 copies Ex. Doc., volume 5, at 50 cents, House of Representatives	127 50	
	67 copies Ex. Doc., volume 5, at 50 cents, Executive Department.....	33 50	
	23 copies Ex. Doc., volume 5, at 50 cents, foreign legations.....	11 50	
	78 copies Ex. Doc., volume 5, at 50 cents, senators.....	39 00	
	4 copies Ex. Doc., volumes 5 and 6, at 50 cents, mint	4 00	
	2 copies Ex. Doc., volumes 5 and 6, at 50 cents, Court of Claims.....	2 00	
	2 copies Ex. Doc., volumes 5 and 6, at 50 cents, congressional library	2 00	
	2 copies Ex. Doc., volumes 5 and 6, at 50 cents, Naval and Military Academies.....	2 00	
	Same, in calf:		
	30 copies Ex. Doc., volumes 5 and 6, House of Representatives.....	36 60	
	10 copies Ex. Doc., volumes 5 and 6, Clerk's office.....	12 20	
	28 copies Ex. Doc., volumes 5 and 6, Senate.....	34 16	
	Titling 300 volumes, ending November 23, at 25 cents	75 00	614 46
John D. Thomson	Varnishing 6 water closets.....	4 50	
	Do....1 large washstand.....	1 50	
	Do....1 bookcase, in folding room.....	1 00	
	Do....1 closet.....do.....	50	
	Do....3 chairs, 75 cents; do. 1 desk, 50 cents, in folding room.....	1 25	
	Do....1 washstand, 50 cents; do. table, 75 cents.....do.....	1 25	
	Do....counter and drawers, \$1 50; sofa, \$1.....do.....	2 50	
	Do....18 sofas, \$18; do. 5 stools, \$1 25, in hall.....	19 25	
	Do....Speaker's and reporters' desks.....do.....	1 50	
	Do....washstands, in dressing room.....	4 00	
			37 25
James Galway.....	Painting and glazing in restaurant:		
	398 pounds paint	71 64	
	3 gallons shellac.....	9 00	
	1 light, fancy glass	1 00	
	38 days' labor.....	85 50	
			167 14
James Galway.....	Painting in heating and ventilating department:		
	156 pounds paint.....	28 08	
	36.....do.. china glass.....	18 00	
	48.....do.. green paint	14 40	
	26 days' labor.....	58 50	
			118 98

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
James Galway.....	Painting in water closets:		
	286 pounds of paint.....	\$51 48	
	18 days' work.....	40 50	
	3 gallons shellac.....	9 00	
			\$100 98
Edward Ball.....	Horse and wagon from August 1 to December 31, 1861, 153 days.....		306 00
John D. Thomson	Committee on Elections:		
	98 yards tapestry carpet, \$171 50; thread and tacks, \$1.....	172 50	
	Making and laying the same.....	24 50	
	Removing furniture.....	2 50	
	Hanging 4 sets curtains	6 00	
	Varnishing committee table, \$1; do. 10 chairs, \$2 50; do. 1 washstand, 50 cents; 1 bookcase, \$1	5 00	
	Committee on Public Buildings and Grounds:		
	99 yards carpet, \$173 25; thread and tacks, \$1	174 25	
	Making 99 yards carpet	24 75	
	Removing furniture.....	2 00	
	Hanging 4 sets curtains	6 00	
	Varnishing 1 committee table, \$1; do. 1 sofa, \$1; do. 6 chairs, \$1 50; do. 1 book- case, \$1; do. 2 washstands, \$1.....	5 50	
	Committee on Revolutionary Claims:		
	89 yards carpet, \$155 75; removing furniture, \$2.....	157 75	
	Making carpet, \$22 25; thread and tacks, \$1	23 25	
	Varnishing committee table, \$1; hanging three sets curtains, \$4 50.....	5 50	
	Varnishing 6 chairs, \$1 50; 1 bookcase, \$1; 1 washstand, 50 cents	3 00	
	Committee on Patents:		
	Laying carpet, \$4; removing furniture, \$2.....	6 00	
	Hanging three sets cornice, \$3; varnishing 8 chairs, \$2	5 00	
	Varnishing 1 committee table, \$1; 2 washstands, \$1.....	2 00	
	Do.....1 bookcase	1 00	
	Committee on Military Affairs:		
	97 yards tapestry carpet, \$169 75; thread and tacks, \$1.....	170 75	

C. H. Miller.....	Making carpet, \$24 25; removing furniture, \$2 50.....	26 75	1,046 00
W. D. Wallach.....	Hanging 4 sets curtains.....	6 00	
H. P. Bennett.....	Varnishing 2 bookcases, \$2; do. 1 committee table, \$1.....	3 00	97 83
J. B. S. Todd.....	Do. 1 sofa, \$1; do. 10 chairs, \$2 50; washstand, 50 cents.....	4 00	50 00
E. S. Tappan.....	Room No. 56:.....		50 00
	102 yards tapestry carpet.....	178 50	
	Removing furniture.....	4 00	
	Making and laying carpet.....	25 50	
	Thread and tacks.....	1 00	
	Messenger in House of Representatives, under resolution of January 14, 1861, from December 2 to 31, 1861.....		
	Newspapers, 1st session 37th Congress.....		
	do.....do.....		
	do.....do.....		
	Daily (Boston) Advertiser for—		
Hon. H. L. Dawes.....		2 00	
F. H. Morse.....		8 00	
C. Delano.....		2 00	
			12 00
A. G. Shaver.....	4 dozen patent erasers, No. 1.....	18 00	
	3--do.....do..... No. 3.....	13 50	
	1½-do.....do..... No. 5.....	8 25	
	4--do.....do..... No. 10.....	12 00	
	½-do.....do..... (samples).....	1 68	
	Capitol police, pay-roll for December, 1861.....		53 43
N. Darling.....	do.....do.....	72 50	
R. Strong.....	do.....do.....	45 83	
Sam. J. Johnson.....	do.....do.....	45 83	
J. S. Magee.....	do.....do.....	45 83	
C. C. Casey.....	do.....do.....	45 83	
S. C. Wailes.....	do.....do.....	45 83	
J. W. Westfall.....	do.....do.....	45 83	
D. A. Clayton.....	do.....do.....	45 83	
J. B. Brown.....	do.....do.....	45 83	
J. A. Wise.....	do.....do.....	45 83	
G. W. Garrett.....	do.....do.....	45 83	
J. Vanderheyden.....	do.....do.....	45 83	
J. Plant.....	do.....do.....	45 83	

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
L. P. Blodgett	Capitol police, pay-roll for December, 1861	\$45 83	\$924 79
A. Ritter	do.....do.....	45 83	
Samuel A. Hilton	do.....do.....	45 83	
A. Coburn	do.....do.....	45 83	
J. W. Babson	do.....do.....	45 83	
W. J. Belshaw	do.....do.....	40 35	
D. G. Vose.....	do.....do.....	33 33	
Pages, pay-roll for December, 1861 :			
W. D. Todd.....	From December 2 to 6.....	10 00	
S. S. Stone.....	do.....7 to 31.....	50 00	
George T. Coffin.....	do.....2 to 9.....	16 00	
T. F. Lindsley	do.....10 to 31.....	44 00	
John Jones.....	do.....2 to 9.....	16 00	
Theodore Fremont.....	do.....10 to 31.....	44 00	
F. C. Harris.....	do.....3 to 9.....	16 00	
Charles Alford	do.....10 to 31.....	44 00	
Charles Hinton.....	do.....2 to 9.....	16 00	
A. S. Knight.....	do.....10 to 31.....	44 00	
Edward W. Hall.....	do.....2 to 10.....	18 00	
John W. Patterson	do.....11 to 31.....	42 00	
William O'Neal	do.....2 to 17.....	32 00	
H. A. Duncanson.....	do.....18 to 31.....	28 00	
George D. Bowen.....	do.....2 to 16.....	30 00	
Charles A. Johnson.....	do.....17 to 31.....	30 00	
Maulsley Hewett	do.....2 to 31.....	60 00	
Robert C. Dorsey	do.....do.....	60 00	
A. P. Reeves.....	do.....do.....	60 00	
W. H. Boughton	do.....do.....	60 00	
Charles E. White.....	do.....do.....	60 00	
George S. M. Boyd	do.....do.....	60 00	
Perry Goodwin	do.....do.....	60 00	

John E. Pillsbury.....	do.....do.....	60 00
George Capon.....	do.....do.....	60 00
A. Parrish.....	do.....do.....	60 00
R. G. Olcott.....	do.....do.....	60 00
Chapman Johnson.....	do.....do.....	60 00
Henry McLean.....	do.....do.....	60 00
W. D. Craven.....	do.....do.....	60 00
W. R. Bradford.....	do.....do.....	30 00
		1,350 00
L. M. Emmart.....	Engineers, &c., pay-roll, for December, 1861.....	125 00
J. H. Clements.....	do.....do.....do.....	100 00
E. T. Bridges.....	do.....do.....do.....	100 00
Joseph Mansfield.....	do.....do.....do.....	62 00
Jno. H. Barker.....	do.....do.....do.....	62 00
John H. Garges.....	do.....do.....do.....	62 00
Wm. Sanderson.....	do.....do.....do.....	62 00
Jos. B. Stanley.....	do.....do.....do.....	62 00
		635 00
J. H. Renshaw.....	Temporary mail boys, pay-roll, December, 1861.....	50 00
Henry Shreiner.....	do.....do.....do.....	50 00
		100 00
Lawrence Bess.....	Folders, pay-roll for December, 1861, at \$2 per day.....	60 00
John Boyd.....	30 days.....	60 00
James H. Hall.....	December 1 to 22.....	44 00
Jos. Quantrill.....	do.....do.....	33 00
		197 00
J. D. B. Little.....	Folding documents.....	100 00
J. S. Read.....	do.....do.....do.....	100 00
Samuel Quicksall.....	do.....do.....do.....	100 00
J. R. Zimmerman.....	do.....do.....do.....	77 50
A. B. McLain.....	do.....do.....do.....	77 50
J. M. Shorno.....	do.....do.....do.....	77 50
J. S. Samson.....	do.....do.....do.....	77 50
A. H. Walcott.....	do.....do.....do.....	77 50
J. S. Kellogg.....	do.....do.....do.....	93 00
Nelson Joy.....	do.....do.....do.....	93 00
Zach. Brown.....	do.....do.....do.....	62 00
W. J. Harris.....	do.....do.....do.....	62 00

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Levi Meiley.....	Folding documents.....	\$62 00	\$1,121 50
Wm. Cunningham.....	do.....do.....	62 00	
Henry N. Carter.....	Folders, pay-roll, December, 1861.....	100 00	793 00
Elias S. Reed.....	do.....do.....	100 00	
G. W. Martinet.....	do.....do.....	100 00	
H. L. Hosmer.....	do.....do.....	100 00	
B. G. Wheeler.....	do.....do.....	100 00	
Ezekiel Young.....	do.....do.....	100 00	
Richmond Davol.....	do.....do.....	100 00	
W. T. Evans.....	do.....do.....	46 50	
Jno. F. Brandt.....	do.....do.....	46 50	
David R. Sperry.....	Folders, pay-roll, December, 1861.....	90 00	495 00
Samuel Deal.....	do.....do.....	90 00	
R. B. Encole.....	do.....do.....	90 00	
C. W. Odell.....	do.....do.....	75 00	
F. D. Curtis.....	do.....do.....	75 00	
Charles E. Hanson.....	do.....do.....	75 00	480 50
Aaron Harding.....	Laborers, pay-roll, December, 1861.....	62 00	
Wm. Twine.....	do.....do.....	46 50	
Wm. H. Smith.....	do.....do.....	46 50	
Aaron Russell.....	do.....do.....	46 50	
Jno. Costin.....	do.....do.....	46 50	
Alex. Bruce.....	do.....do.....	46 50	
John Johnson.....	do.....do.....	46 50	
Levi Saunders.....	do.....do.....	46 50	
David Fisher.....	do.....do.....	46 50	
John T. Chauncey.....	do.....do.....	46 50	

John D. Thomson	Committee on Mileage :	
	85 yards tapestry carpet.....	148 75
	Thread and tacks.....	1 00
	Making and laying carpet.....	21 25
	Removing furniture.....	3 00
	Hanging 3 sets curtains.....	3 00
	Varnishing committee table, \$1; 2 washstands, \$1; 7 chairs, \$2 25; 1 sofa, \$1.....	5 25
	Committee on Pensions :	
	128 yards tapestry carpet.....	224 00
	Thread and tacks.....	1 00
	Making and laying carpet.....	32 00
	Removing furniture.....	3 50
	Hanging 2 sets curtains.....	2 00
	Varnishing 1 committee table.....	1 00
	Varnishing 1 small table, 50 cents; varnishing 2 washstands, \$1; varnishing sofa, \$1; varnishing secretary, \$1.....	3 50
	Varnishing 8 chairs, \$2; 1 hat-rack, 50 cents.....	2 50
	Post office :	
	90 yards tapestry carpet, \$157 50; thread and tacks, \$1.....	158 50
	Making and laying carpet.....	22 50
	Removing furniture.....	2 50
	Hanging 3 sets curtains.....	4 50
	Varnishing counter and drawers.....	3 00
	Varnishing 3 chairs, 75 cents; varnishing 2 sofas, \$2; varnishing 1 washstand, \$1; varnishing 1 hat-rack, 50 cents; varnishing desk and railing, \$1 50.....	5 75
	Room No. 6 :	
	Laying carpet, \$4; removing furniture, \$3.....	7 00
	Hanging 3 sets curtains.....	4 50
	Varnishing committee table.....	1 00
	Varnishing bookcase, \$1; varnishing sofa, \$1.....	2 00
	Varnishing 2 washstands, \$1; varnishing 6 chairs, \$1 50.....	2 50
	Committee on Territories :	
	70 yards tapestry carpet.....	22 50
	Thread and tacks.....	1 00
	Making and laying.....	17 50
	Removing furniture.....	3 00
	Varnishing 1 map-rack.....	50
	Varnishing sofa, \$1; varnishing 10 chairs, \$2 50.....	3 50

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
John D. Thomson—Continued.....	Varnishing hat-rack, 50 cents; varnishing 2 washstands, \$1.....	\$1 50	\$817 00
	Varnishing bookcase, \$1; varnishing 1 committee table, \$1	2 00	
	Edward Ball, Sergeant-at-Arms:		160 00
	200 mourning weeds, used at funeral of R. S. Bingham.....	80 00	
	200 mourning weeds, used at funeral of Edward Baker.....	80 00	
Benjamin Ross	Laborer, pay-roll, from December 2 to December 31	45 00	210 00
Julius De Saules.....	do.....do.....	45 00	
Thomas Bell	do.....do.....	45 00	
John Massey	do.....do.....	45 00	
Henry Hall	do.....December 11 to December 31	30 00	
Latimer Bros. & Seymour.....	25 gross Perry's blue barrel pens.....	120 00	
	25 dozen black swan's quill pens.....	13 75	
	25 gross Somerville & Co.'s pens	8 25	
	25 gross McLeman's card pens	5 75	
	25 gross Blamzy & Co.'s pens	12 50	
	10 gross Gillott's pens, No. 170.....	7 00	
	10 do.....do.....	9 40	
	10 do.....do.....	42 00	
	10 gross Perry's elastic pens	4 50	
	10 do.....do.....	4 90	
	15 gross Bainbridge & Co.'s pens.....	9 75	
	10 do.....do.....	6 40	
	2 dozen Slocumb's patent inkstands.....	13 90	
	1 dozen Whitney's patent inkstands.....	10 00	
	1 dozen Draper's improved inkstands.....	5 00	
	1 dozen office shears	11 95	
	4 dozen scissors, 4-inch	17 80	
	8 dozen Colen pencils, sample No. 4.....	12 48	
	1 dozen small pencils, No. 1.....	62	

1.....do.....No. 3.....	65
1 dozen letter clips, No. 11.....	8 40
1.....do.....No. 5.....	5 62
2.....do.....No. 2.....	6 76
1.....do.....No. 4.....	4 38
1 dozen letter files, No. 5.....	8 95
1 dozen letter clips, No. 6.....	4 95
15 pounds rubber, assorted.....	16 05
4 dozen bottles pomice.....	2 80
6 dozen short rubber pencils.....	29 70
1 gross pen-holders.....	1 56
1.....do.....	4 38
1.....do.....	2 60
1 dozen pen-holders.....	3 50
1.....do.....	5 75
1.....do.....	3 52
10 gross pen-holders.....	22 00
1.....do.....	5 63
1 dozen pen-holders.....	3 50
1.....do.....	3 75
1.....do.....	2 50
50 gross Washington med. pens.....	37 00
4 dozen pearl handle knives, 6 blades.....	95 52
4 dozen shell handle knives, 6 blades.....	100 00
1½ dozen shell handle knives, 4 blades.....	28 40
1½.....do.....do.....	31 88
1½.....do.....do.....	24 38
1½.....do.....do.....	22 50
1½ dozen pearl handle knives, 4 blades.....	24 38
1½.....do.....do.....	28 40
1½.....do.....do.....	31 87
1½.....do.....do.....	24 38
50 pounds sealingwax.....	82 50
62 spools red tape.....	34 72
½ dozen portfolios.....	20 63
½.....do.....	15 19
½.....do.....	10 48

465 84

448 71

Latimer Bros. & Seymour.....

Latimer Bros. & Seymour.....

A.—Detailed statement of disbursements by the Clerk of the House of Representatives, &c.—Continued.

To whom paid.	For what object.	Amount.	Total.
Latimer Bros. & Seymour—Cont'd ..	1 dozen portfolios	\$8 78	\$215 31
	1 do	7 88	
	1 do	8 78	
	1 do	14 00	
	1 do	12 35	
Latimer Bros. & Seymour	Stationery delivered by them as samples accompanying bids for contract, purchased at 10 per cent. discount	-----	211 02
	2 dozen inkstands	8 76	
	2 do	10 80	
	1 do	12 95	
	1 do	2 81	
	1 do	4 08	134 59
	1 do	6 50	
	1 do	15 00	
	1 dozen office shears, 9-inch	8 95	
	4 do	19 80	
	6 spools red tape, \$3 36; 54 spools red tape, \$41 58	44 94	124 00
Latimer Bros. & Seymour	5 gross pen-holders	12 50	
	12 dozen inkstands	50 40	
	50 gross Washington med. pens	40 00	
	50 gross Leman's commercial pens	14 00	
	12 dozen black swan's quill pens	7 20	98 94
Latimer Bros. & Seymour	1 gross inkstands, \$45 60; 32 spools red tape, \$17 92; 46 spools red tape, \$35 42	-----	
Latimer Bros. & Seymour	2 dozen pearl handle knives	-----	
A. R. Smith	Services as clerk to Committee on Military Affairs, from December 2 to December 31	-----	
A. Gilyers	Services as clerk to the Committee on Indian Affairs, from December 7 to December 31	-----	
Lucretia Gardiner	Services in ladies' retiring room, from December 2 to December 31, 30 days	-----	30 00
Beal, Green & Co.	"Boston Daily Post" to Hon. D. E. Sickles, 2d session 36th Congress	-----	

B.

Account of stationery furnished the Postmaster of the House of Representatives

Articles.	Price.	Amount.
87 reams letter paper per ream..	\$3 25	\$282 75
19.....do .....do.....	4 00	76 00
7.....do .....do.....	4 50	31 50
2.....do .....do.....	3 75	7 20
1.....do .....do.....	4 25	4 25
2.....do .....do.....	2 25	4 50
1 $\frac{3}{4}$.....do .....do.....	6 00	10 50
84.....do .....do.....	2 80	235 20
12.....do .....do.....	3 00	36 00
10.....do .....do.....	2 60	26 00
5.....do .....do.....	2 50	12 50
31 reams note paper .....do.....	75	23 25
47 $\frac{1}{2}$.....do .....do.....	1 50	71 25
6.....do .....do.....	1 00	6 00
15 $\frac{1}{2}$.....do .....do.....	2 25	34 87
32 $\frac{1}{4}$.....do .....do.....	2 75	88 69
21.....do .....do.....	2 50	52 50
14 $\frac{1}{2}$.....do .....do.....	3 00	43 50
2 $\frac{1}{4}$.....do .....do.....	4 00	9 00
2 $\frac{3}{4}$.....do .....do.....	2 00	5 50
60.....do .....do.....	1 73	103 80
1.....do .....do.....	1 75	1 75
13.....do .....do.....	1 35	17 55
17.....do .....do.....	2 73	46 41
15 $\frac{1}{2}$ reams foolscap paper.....do.....	4 50	68 72 $\frac{1}{2}$
5 $\frac{1}{2}$.....do .....do.....	3 25	17 87 $\frac{1}{2}$
20.....do .....do.....	3 00	60 00
6 $\frac{1}{2}$.....do .....do.....	2 90	18 85
4.....do .....do.....	1 50	6 00
4.....do .....do.....	4 00	16 00
2.....do .....do.....	3 50	7 00
5 reams legal cap paper.....do.....	6 00	30 00
1.....do .....do.....	6 50	6 50
36 reams tissue paper .....do.....	50	18 00
1 ream demy paper .....do.....	3 26	3 26
$\frac{1}{2}$ ream bill paper.....do.....	4 25	2 12 $\frac{1}{2}$
4 reams Bath paper.....do.....	3 50	14 00
18.....do .....do.....	2 20	39 60
116 reams Manilla paper.....do.....	2 70	313 20
572.....do .....do.....	1 20	686 40
374.....do .....do.....	2 24	837 76
8.....do .....do.....	3 35	26 80
10,000 envelopes..... per M..	1 72	17 20
10,700.....do .....do.....	7 00	74 90
2,000.....do .....do.....	7 50	15 00
15,550.....do .....do.....	4 50	69 97 $\frac{1}{2}$
62,450.....do .....do.....	3 50	218 57 $\frac{1}{2}$
2,400.....do .....do.....	4 00	9 60
13,600.....do .....do.....	3 25	44 20
24,700.....do .....do.....	2 75	67 92
18,500.....do .....do.....	2 50	46 25
119,500.....do .....do.....	2 90	346 65
500.....do .....do.....	6 50	3 25
1,450.....do .....do.....	4 75	6 89
4,500.....do .....do.....	6 95	31 27 $\frac{1}{2}$

B.—Account of stationery furnished, &c.—Continued.

Articles.	Price.	Amount.
80,500 envelopes.....per M..	\$3 00	\$241 50
25,000...do.....do....	2 00	50 00
24,000...do.....do....	2 80	67 20
10,000...do.....do....	2 68	26 80
3,000...do.....do....	4 25	12 75
1,100...do.....do....	5 50	6 05
1,500...do.....do....	2 70	4 05
200...do.....do....	6 25	1 25
1,000...do.....do....	6 00	6 00
134,000...do.....do....	1 45	194 30
17 gross engraved envelopes.....per gross..	1 00	17 00
3½.....do.....do....	87½	3 06
4.....do.....do....	2 00	8 00
16.....do.....do....	50	8 00
1½ dozen inkstands.....per dozen..	6 00	8 50
1½.....do.....do....	12 00	18 00
7½.....do.....do....	5 00	36 66
2.....do.....do....	39 00	26 00
½.....do.....do....	10 50	5 25
½.....do.....do....	7 50	5 00
1½.....do.....do....	6 95	7 53
1½.....do.....do....	18 00	7 50
2½.....do.....do....	3 80	10 93
1½.....do.....do....	4 38	6 57
7½.....do.....do....	30 00	17 50
½.....do.....do....	12 95	6 47½
½.....do.....do....	13 00	6 50
1.....do.....do....	2 80	2 80
½.....do.....do....	5 40	2 70
1.....do.....do....	15 00	15 00
¼.....do.....do....	18 36	4 59
1½.....do.....do....	8 50	4 25
1½.....do.....do....	9 00	75
5.....do.....do....	3 50	17 50
1½.....do.....do....	9 50	79
1½.....do.....do....	10 00	3 33
1½.....do.....do....	24 96	2 08
1½.....do.....do....	19 56	1 63
1½.....do.....do....	22 56	1 88
2½ dozen black ink.....do....	4 50	9 37½
1.....do.....do....	5 40	5 40
1½.....do.....do....	1 95	2 11
1½.....do.....do....	4 00	7 33
1½.....do.....do....	2 50	3 54
1½.....do.....do....	2 40	20
5.....do.....do....	1 75	8 75
5.....do.....do....	1 50	7 50
1½.....do.....do....	3 00	1 00
½ dozen writing fluid.....do....	9 00	4 50
3½ dozen red ink.....do....	5 00	17 50
¾.....do.....do....	2 50	1 87½
18½ gross pens.....per gross..	3 50	63 87½
4.....do.....do....	1 50	6 00
3.....do.....do....	1 25	3 75
5.....do.....do....	4 50	22 50
1½.....do.....do....	4 00	5 00
1 box pens.....per box..	60	60
6.....do.....do....	63	3 78
7.....do.....do....	95	6 65

B.—Account of stationery furnished, &c.—Continued.

Articles.	Price.	Amount.
19 boxes pens.....per box..	\$0 85	\$16 15
40 do.....do.....	75	30 00
18 do.....do.....	45	8 10
1 do.....do.....	49	49
24 do.....do.....	74	17 76
24 do.....do.....	23	5 52
11 do.....do.....	94	10 34
10 do.....do.....	70	7 00
14 do.....do.....	50	7 00
4 do.....do.....	34	1 36
12 do.....do.....	33	3 96
12 do.....do.....	65	7 80
1 do.....do.....	45	45
2 do.....do.....	30	60
2 do.....do.....	40	80
8 do.....do.....	38	3 04
2 do.....do.....	1 20	2 40
2 do.....do.....	25	50
$\frac{1}{4}$ dozen gold pens.....per dozen..	36 00	9 00
$1\frac{3}{4}$ do.....do.....	42 00	73 50
$1\frac{1}{2}$ do.....do.....	27 00	11 25
$1\frac{1}{2}$ do.....do.....	33 00	44 00
1 gold case pen and pencil	11 50	11 50
1 do.....do.....	9 50	9 50
1 do.....do.....	13 00	13 00
1 do.....do.....	10 50	10 50
1 do.....do.....	8 50	8 50
3 paper weights.....each.....	75	2 25
3 do.....do.....	1 00	3 00
1 do.....do.....	1 50	1 50
1 do.....do.....	1 25	1 25
$6\frac{3}{4}$ gross pen-holders.....per gross..	3 00	20 25
$8\frac{1}{2}$ do.....do.....	2 20	17 10
$1\frac{1}{2}$ do.....do.....	4 38	6 57
3 do.....do.....	1 65	4 95
$1\frac{1}{2}$ do.....do.....	75	1 12 $\frac{1}{2}$
$\frac{1}{2}$ do.....do.....	1 12	56
$2\frac{1}{4}$ dozen pen holders.....per dozen..	25	56
1 do.....do.....	5 75	5 75
2 do.....do.....	3 50	7 00
$1\frac{1}{2}$ do.....do.....	2 52	3 78
$1\frac{1}{2}$ do.....do.....	3 75	5 62 $\frac{1}{2}$
$\frac{1}{2}$ do.....do.....	1 25	62 $\frac{1}{2}$
$\frac{1}{2}$ do.....do.....	5 00	2 50
$\frac{1}{2}$ do.....do.....	12	6
1 do.....do.....	18	18
1 do.....do.....	3 00	3 00
2 penholders.....each.....	42	84
2 do.....do.....	29	58
$\frac{1}{2}$ dozen gold and rubber pencils.....per dozen..	54 00	27 00
6 dozen gutta-percha pencils.....do.....	6 00	36 00
$2\frac{1}{8}$ do.....do.....	5 50	11 91 $\frac{1}{2}$
6 do.....do.....	4 95	29 70
1 do.....do.....	9 33	9 33
2 dozen ivory pencils.....do.....	7 50	15 00
$\frac{1}{2}$ do.....do.....	10 50	5 25
5 do.....do.....	6 00	30 00
$2\frac{1}{2}$ gross lead pencils.....per gross..	6 00	15 00
$1\frac{1}{2}$ do.....do.....	7 50	11 25

B.—Account of stationery furnished, &c.—Continued.

Articles.	Price.	Amount.
$1\frac{9}{12}$ gross lead pencils.....per gross..	\$4 35	\$3 62
$8\frac{1}{4}$.....do.....do.....	7 20	59 40
1.....do.....do.....	7 00	7 00
$5\frac{1}{2}$.....do.....do.....	9 00	49 50
$\frac{1}{2}$ dozen lead pencils.....per dozen..	60	30
$1\frac{1}{2}$ dozen mucilage.....do.....	12 00	22 00
$2\frac{1}{4}$.....do.....do.....do.....	4 00	9 00
2.....do.....do.....do.....	2 75	5 50
$\frac{1}{12}$.....do.....do.....do.....	2 00	17
4.....do.....do.....do.....	3 50	14 00
17 pairs scissors.....each.....	1 75	29 75
6.....do.....do.....	50	3 00
1.....do.....do.....	42	42
3.....do.....do.....	$37\frac{1}{2}$	$1\ 12\frac{1}{2}$
7.....do.....do.....	1 00	7 00
1.....do.....do.....	2 00	2 00
$1\frac{1}{2}$ dozen blank books.....per dozen..	15 00	13 75
$1\frac{1}{6}$.....do.....do.....do.....	4 50	5 25
1.....do.....do.....do.....	12 00	12 00
$2\frac{3}{4}$.....do.....do.....do.....	9 00	24 75
$2\frac{7}{12}$.....do.....do.....do.....	6 00	12 50
1.....do.....do.....do.....	4 20	4 20
$\frac{1}{2}$.....do.....do.....do.....	3 60	1 80
.....do.....do.....do.....	5 00	2 50
$\frac{3}{4}$.....do.....do.....do.....	1 80	1 35
$\frac{2}{3}$.....do.....do.....do.....	9 60	6 40
$\frac{1}{4}$.....do.....do.....do.....	8 40	2 10
$\frac{1}{12}$.....do.....do.....do.....	8 16	68
$\frac{1}{2}$ dozen portfolios.....per dozen..	24 00	12 00
$\frac{1}{2}$.....do.....do.....do.....	28 00	14 00
$\frac{1}{2}$.....do.....do.....do.....	15 75	$7\ 87\frac{1}{2}$
$1\frac{1}{2}$.....do.....do.....do.....	17 56	26 24
$\frac{1}{2}$.....do.....do.....do.....	20 95	$10\ 47\frac{1}{2}$
$\frac{1}{2}$.....do.....do.....do.....	30 37	$15\ 18\frac{1}{2}$
$\frac{1}{2}$.....do.....do.....do.....	41 25	$20\ 62\frac{1}{2}$
$\frac{1}{4}$.....do.....do.....do.....	27 00	6 75
$\frac{1}{4}$.....do.....do.....do.....	21 00	5 25
$\frac{1}{4}$.....do.....do.....do.....	39 00	9 75
$\frac{1}{12}$.....do.....do.....do.....	36 00	3 00
13 boxes blotting paper.....per box..	2 63	34 19
$19\frac{1}{2}$ packages.....do.....per package..	$7\frac{1}{2}$	1 37
$8\frac{1}{12}$ dozen knives.....per dozen..	15 00	16 25
$2\frac{1}{12}$.....do.....do.....do.....	30 00	87 50
$2\frac{7}{12}$.....do.....do.....do.....	6 00	15 00
$\frac{1}{2}$.....do.....do.....do.....	19 00	9 50
1.....do.....do.....do.....	33 00	33 00
$\frac{2}{3}$.....do.....do.....do.....	26 00	17 33
1.....do.....do.....do.....	14 00	14 00
$\frac{1}{2}$.....do.....do.....do.....	17 50	8 75
$\frac{3}{4}$.....do.....do.....do.....	24 00	18 00
$\frac{1}{6}$.....do.....do.....do.....	28 00	4 67
$\frac{1}{12}$.....do.....do.....do.....	17 00	14 16
3.....do.....do.....do.....	16 25	48 75
$2\frac{1}{2}$.....do.....do.....do.....	21 25	$53\ 12\frac{1}{2}$
3.....do.....do.....do.....	18 93	57 79
$1\frac{1}{2}$.....do.....do.....do.....	23 88	35 83
1.....do.....do.....do.....	25 00	25 00
$\frac{1}{2}$.....do.....do.....do.....	18 50	18 25
4.....do.....do.....do.....	19 50	78 00

B.—Account of stationery furnished, &c.—Continued.

Articles.	Price.	Amount.
1 knife	\$2 75	\$2 75
1 do	2 06	2 06
2½ dozen erasers..... per dozen..	4 80	12 00
5 do..... do.....	4 50	22 50
1 do..... do.....	5 50	5 50
2 do..... do.....	3 00	6 00
5 do..... do.....	3 75	1 56
1½ dozen rulers..... do.....	7 20	9 60
1 do..... do.....	3 00	3 00
1 do..... do.....	9 00	9 00
1 do..... do.....	5 00	5 00
1 do..... do.....	7 50	7 50
1 do..... do.....	4 50	4 50
¾ do..... do.....	7 80	5 85
1 dozen tapers..... do.....	1 50	1 50
2 do..... do.....	3 00	6 00
8 dozen silk taste..... do.....	3 00	24 00
2 travelling cases..... each.....	7 50	15 00
2 do..... do.....	8 50	17 00
2 do..... do.....	9 50	19 00
500 quills..... per 100.....	2 50	12 50
156 boxes black sand..... per box.....	4	6 24
6½ dozen packs visiting cards..... per dozen..	3 00	19 50
1½ do..... do.....	4 00	4 66
11 pounds sealingwax..... per pound.....	1 50	16 50
10 do..... do.....	1 65	16 50
6½ dozen paper folders..... per dozen.....	4 50	27 37½
1 do..... do.....	11 50	11 50
5½ do..... do.....	6 00	33 00
4 paper folders..... each.....	90	3 60
1½ dozen paper clasps..... per dozen.....	8 50	14 87½
1 do..... do.....	5 62	5 62
1½ do..... do.....	8 40	9 10
1 do..... do.....	3 38	3 38
1 do..... do.....	8 95	8 95
1 do..... do.....	4 95	4 95
2 dozen rubber bands..... do.....	25	50
2 do..... do.....	34	68
3 do..... do.....	44	1 32
2 do..... do.....	50	1 00
1 do..... do.....	6	6
1 dozen letter stamps..... do.....	6 00	6 00
2½ dozen pen-wipers..... do.....	3 00	7 50
10 do..... do.....	2 25	22 50
10 dozen boxes pencil leads..... do.....	1 37	13 70
4 diaries..... each.....	50	2 00
3 do..... do.....	75	2 25
12½ dozen sand boxes..... per dozen.....	3 00	37 50
14 balls twine..... per ball.....	8	1 12
1 dozen packages tape..... per package.....	30	3 60
1½ do..... do.....	50	10 50
6 spools tape..... per spool.....	1 50	9 00
4 do..... do.....	1 25	5 00
3 do..... do.....	77	2 31
3 do..... do.....	56	1 68

C.

Account of stationery furnished the Clerk's office.

Articles.	Price.	Amount.
11½ reams letter paper..... per ream..	\$3 25	\$37 47½
½..... do..... do.....	2 00	1 00
10½..... do..... do.....	4 00	41 00
1¾..... do..... do.....	3 00	5 25
7½..... do..... do.....	4 50	33 75
7½ reams note paper..... do.....	2 50	18 12½
3..... do..... do.....	2 25	6 75
2½..... do..... do.....	2 75	6 18½
7½..... do..... do.....	1 50	10 82½
2½..... do..... do.....	3 00	7 50
1..... do..... do.....	75	75
1½..... do..... do.....	2 00	2 50
4 reams foolscap paper..... do.....	4 50	18 00
1½..... do..... do.....	3 50	4 20
3 quires foolscap paper.....		45
½ ream legal cap paper..... per ream..	6 00	3 00
1..... do..... do.....	6 50	6 50
½ ream bill paper..... do.....	4 50	2 25
1 ream Bath post paper..... do.....	2 50	2 50
3 boxes pens..... per box..	85	2 55
1..... do..... do.....	60	60
1..... do..... do.....	25	25
1..... do..... do.....	29	29
3..... do..... do.....	63	1 89
4..... do..... do.....	38	1 52
5..... do..... do.....	33	1 65
1..... do..... do.....	10	10
2..... do..... do.....	30	60
1..... do..... do.....	50	50
4..... do..... do.....	45	1 80
1..... do..... do.....	1 00	1 00
7..... do..... do.....	40	2 80
1..... do..... do.....	32	32
2..... do..... do.....	55	1 10
4 dozen pens..... per dozen..	1 25	5 00
1½ dozen pencils..... do.....	38	70
3..... do..... do.....	63	1 89
4..... do..... do.....	75	3 00
½ dozen gutta-percha pencils..... do.....	5 50	2 75
1 gutta-percha pencil..... do.....	88	88
1..... do..... do.....	63	63
1..... do..... do.....	80	80
¼ dozen color pencils..... do.....	1 00	25
4 dozen pencils..... do.....	60	2 40
2..... do..... do.....	50	1 00
1 blank book.....	1 50	1 50
4..... do..... each.....	40	1 60
2..... do..... do.....	6	12
2..... do..... do.....	1 00	2 00
1..... do..... do.....	3 75	3 75
7..... do..... do.....	38	2 66
2..... do..... do.....	1 25	2 50
1..... do..... do.....	50	50
2 sand boxes..... do.....	25	50
1 paper clasp.....	71	71
4 paper weights..... each.....	1 50	6 00

C.—Account of stationery furnished, &c.—Continued.

Articles.	Price.	Amount.
2 paper weights.....each.....	\$1 25	\$2 50
1.....do.....do.....	75	75
$\frac{3}{4}$ dozen paper folders.....per dozen.....	4 50	3 37 $\frac{1}{2}$
$\frac{1}{2}$.....do.....do.....	11 50	3 83
$\frac{1}{2}$.....do.....do.....	6 00	50
3 bottles ink.....each.....	25	75
1.....do.....do.....	38	38
2.....do.....do.....	75	1 50
2.....do.....do.....	33	66
6.....do.....do.....	21	1 26
3 bottles red ink.....do.....	21	63
3,600 envelopes.....per M.....	3 25	5 20
525.....do.....do.....	7 00	3 67
7,550.....do.....do.....	3 50	26 42
5,600.....do.....do.....	4 00	22 40
500.....do.....do.....	6 95	3 47 $\frac{1}{2}$
1,650.....do.....do.....	2 75	4 53
100.....do.....do.....	4 50	45
150.....do.....do.....	5 50	82 $\frac{1}{2}$
2,500.....do.....do.....	2 50	6 25
500.....do.....do.....	2 70	1 35
600.....do.....do.....	6 00	3 60
2,300.....do.....do.....	3 00	6 90
125.....do.....do.....	2 90	36
50.....do.....do.....	2 80	14
200.....do.....do.....	6 50	1 30
3 $\frac{3}{4}$ dozen pen-holders.....per dozen.....	25	93
5 pen-holders.....each.....	42	2 10
8.....do.....do.....	21	1 68
1 bottle mucilage.....each.....	1 00	1 00
2 bottles.....do.....each.....	17	34
1 dozen.....do.....per dozen.....	4 00	4 00
$\frac{1}{4}$ dozen knives.....do.....	15 00	3 75
$\frac{3}{8}$.....do.....do.....	30 00	20 00
$\frac{1}{4}$.....do.....do.....	33 00	8 25
$\frac{5}{12}$.....do.....do.....	26 00	10 88
1 knife.....do.....	50	50
1.....do.....do.....	1 42	1 42
1.....do.....do.....	1 88	1 88
1.....do.....do.....	1 60	1 60
2 knives.....each.....	1 50	3 00
2.....do.....do.....	1 67	3 34
1 pair scissors.....each.....	50	50
3 pair shears.....each.....	1 75	5 25
2 erasers.....do.....	32	64
1 eraser.....do.....	40	40
1.....do.....do.....	38	38
5 packs visiting cards.....each.....	33	1 65
2.....do.....do.....each.....	29	58
2 spools tape.....do.....	1 25	2 50
1.....do.....do.....	1 56	1 56
2 packages.....each.....	50	1 00
13 packages blotting paper.....	7 $\frac{1}{2}$	7 $\frac{1}{2}$
1 scrap-book.....each.....	1 75	1 75
1.....do.....do.....	1 50	1 50
2 inkstands.....each.....	2 25	4 50
2.....do.....do.....	3 25	6 50
4.....do.....do.....	1 50	6 00
5.....do.....do.....	42	2 10

C.—Account of stationery furnished, &c.—Continued.

Articles.	Price.	Amount.
2 inkstands.....	\$0 21	\$0 42
1....do.....	96	96
1....do.....	1 00	1 00
2....do.....	1 25	2 50
1....do.....	46	46
1....do.....	40	40
1....do.....	23	23
1....do.....	58	58
2 pieces sponge.....	9	18
1 letter stamp.....	50	50
3 pen-racks.....	30	90
1 pen-rack.....	1 00	1 00
3 bunches quills.....	63	1 89
$\frac{2}{3}$ pound rubber.....	1 50	1 00
9 boxes sand.....	4	36
2 pounds sealingwax.....	1 50	3 00
12 dozen silk taste.....	1 50	18 00
1 dozen silk braid.....	1 50	1 50
4 balls twine.....	20	80
1 ball twine.....	38	38
$\frac{1}{2}$ ream engrossing paper..... per ream..	20 00	10 00
2 boxes pounce.....	25	50
2 rulers.....	65	1 30
2 boxes tapers.....	25	50

D.

Balance of appropriations unexpended.....	\$308,346 51
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FRAUDS IN PROVIDING SUPPLIES FOR THE ARMY.

RESOLUTIONS

OF

THE STATE OF NEW YORK,

IN RELATION TO

Reported frauds in supplies for our armies.

JANUARY 24, 1862.—Referred to the select committee on army contracts, and ordered to be printed.

STATE OF NEW YORK.

IN ASSEMBLY, *Albany, January 17, 1862.*

On motion of Mr. Ogden:

Whereas this house have heard with surprise, pain, and regret the disclosures recently made in Congress of gross frauds, peculations, and corruption, in connexion with supplies for our armies; and whereas these nefarious transactions largely increase the public expenditures and increase the burdens of the people and at the same time bring scandal upon free government, and are sapping the foundation of the republic; and whereas public confidence in the integrity of public officers, and honesty and frugality in the expenditures of public money, is at this time, above all others, essential to the public good, the national credit, and the successful prosecution of the present war on the part of the general government: Therefore be it—

Resolved, That this assembly respectfully ask Congress to enact further and suitable laws to prevent speculation and frauds in providing supplies for our armies, and to make public the names of those who engage therein, and provide penalties for the punishment of all persons, who, in connexion with, or under the guise of army contracts, or otherwise, plunder the public treasury; and also provide safeguards so that soldiers in the field and camp shall be protected from the extortion of army sutlers.

Resolved, That his excellency the governor be requested to transmit to our senators and members of Congress copies of the preceding preamble and resolutions.

By order:

J. B. CUSHMAN, *Clerk.*

TRAIDS IN PROVIDING SUPPLIES FOR THE ARMY.

RESOLUTIONS

THE STATE OF NEW YORK

IN SENATE

Report of the Committee on the subject of the

January 21, 1862.—Referred to the select committee on army supplies, and to be

STATE OF NEW YORK

In Assembly, Albany, January 17, 1862.

On motion of Mr. Ogden:

Resolved, That this assembly respectfully ask Congress to enact further and suitable laws to prevent speculation and frauds in providing supplies for our armies, and to make public the names of those who engage therein, and provide penalties for the punishment of all persons who, in connection with, or under the guise of army contracts, or otherwise, plunder the public treasury; and also provide safeguards so that soldiers in the field and camp shall be protected from the extortion of army sutlers.

Resolved, That his excellency the Governor be requested to transmit to our senators and members of Congress copies of the preceding preamble and resolutions.

By order:

J. B. GUSHMAN, Clerk.

A LIST
OF
REPORTS TO BE MADE TO CONGRESS,
DURING THE
SECOND SESSION OF THE THIRTY-SEVENTH CONGRESS,
BY
PUBLIC OFFICERS.

PREPARED, IN OBEDIENCE TO A STANDING ORDER OF THE HOUSE, BY THE CLERK OF
THE HOUSE OF REPRESENTATIVES.

JANUARY 27, 1862.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1862.

EXTRACT FROM THE RULES AND ORDERS OF THE HOUSE OF REPRESENTATIVES OF THE UNITED STATES.

“It shall be the duty of the Clerk to make, and cause to be printed, and delivered to each member at the commencement of every session of Congress, a list of the reports which it is the duty of any officer or department of the government to make to Congress; referring to the act or resolution, and page of the volume of the Laws or Journal in which it may be contained, and placing under the name of each officer a list of reports required of him to be made, and the time when the report may be expected.”

LIST OF REPORTS

To be made to Congress at the second session of the thirty-seventh Congress by public officers; prepared in obedience to a standing rule of the House of Representatives.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	BY THE PRESIDENT OF THE UNITED STATES. <i>Annual.</i>			
1792, April 2	A statement of the amount, with a description of the coins struck at the mint during the year 1861.	Statutes at Large, volume 1.	249	In January.
1829, March 3	The affairs of the penitentiary in the District of Columbia.	Statutes at Large, volume 4.	366	In January.
1846, Aug. 6	Transfers of appropriations for particular branch of naval service, to other branches of said service.	Statutes at Large, volume 9.	101	Before the adjournment, if transferred during the session; if transferred during the recess, the first week of the next session.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1856, Aug. 18	A report of the rates or tariffs of fees to be charged for official services, and to designate what shall be regarded as official services, besides such as are expressly declared by law, in the business of the several legations, consulates, and commercial agencies, and to adapt the same by such differences as may be necessary or proper to each legation, consulate, or commercial agency.	Statutes at Large, 1st session 34th Congress	57	During the session.
1854, Jan. 17	Information as to the accommodation of the several courts of the United States, the expenses incurred therefor, and what provision can be made for their greater accommodation; and also as to the difficulties in the use, by the officers of the United States, of the several State prisons. <i>Special.</i>	House Journal.	230	No time specified.
1854, Jan. 23	A report of all despatches written by A. Dudley Mann, whilst employed in the diplomatic service of the United States.	Senate Journal.	120	No time specified.

1854, Aug.	4	Report, commercial and statistical, on sea fisheries of New England and British North American provinces, and their influence on trade.	Senate Journal.	673	No time specified.
1856, Aug.	7	A report relative to the establishment of a consulate at the Loo Choo islands.	Senate Journal.	539	During the session.
1858, April	22	A report of such information as the departments of the government may afford concerning the nature, character, and extent of the State duties exacted from foreign vessels and merchandise navigating the Elbe by the kingdom of Hanover, and the grounds of such exactions, and the practicability of obtaining for American shipping an exemption therefrom.	Senate Journal.	371	No time specified.
1858, Jan.	6	A report of the correspondence between the Department of State and our minister near the government of Brazil, in relation to the opening of the Amazon river and the contracting of a reciprocity or other treaty.	House Journal.	141	No time specified.
1858, Jan.	6	A report of all correspondence upon the subject of our relations with Spain not heretofore made public.	House Journal.	141	No time specified.
1858, Jan.	18	A report of all correspondence (not yet published)	House Journal.	195	No time specified.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1858, Feb. 9	lished) between the government of the United States and the government of France (including that of our minister at the court of France) upon the subject of the abolition of privateering, and the exemption of private property from capture upon the high seas. Information relative to negotiations with foreign governments since 1850 for the right of free worship and honorable burial to American citizens resident in or traveling through their dominions, and what governments have rejected these propositions, and the reasons assigned therefor.	House Journal.	362	No time specified.
1858, May 19	Report relative to the condition of the work across the isthmus of Tehuantepec which has been prosecuted under the Sloo grant, and all the instructions heretofore given by the Executive to the minister of the United States in Mexico affecting the operations of the said Sloo, and whether the said grant	House Journal.	849	No time specified.

1859, Jan.	7	has passed into the hands of other parties under the advice of the Executive; if so, who said party is, and upon what terms said party has acquired the claim. And also whether any mail contract has been granted to the said persons by this government, or any department thereof; and if so, upon what security or authority.	Senate Journal.	115	No time specified.
1859, Jan.	11	Report of the correspondence between her Britannic Majesty's government and the minister of the United States in London, touching the abuses of the American flag in the prosecution of the African slave trade on the coast of Africa, and especially touching the cruise of the Wanderer on that coast.	Senate Journal.	126	No time specified.
1859, Jan.	24	Report made to the President of the United States by Thomas Rainey, the special diplomatic agent of the United States to the coast of Africa, relative to the Africans captured from the slave brig Echo and sent	Senate Journal.	179	No time specified.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1859, Feb. 8	to Liberia in the United States steam frigate Niagara. Report of the instructions from the Department of State to William Carey Jones, as special agent of the United States, which are alluded to in executive document of the House of Representatives, No. 2, of the 35th Congress, 2d session, page 58, being a part of a despatch from the Secretary of State to the minister of the United States to Nicaragua and Costa Rica, dated July 25, 1858; also such correspondence, or any part thereof, that Mr. Jones may have had in said capacity with the Department of State, as the publication of will be, in the opinion of the President, not inconsistent with the public interest; also any correspondence or any facts that may be in the knowledge of the executive departments of the government on which could have been based the following "declaration" of Juan R. Mora and Thomas Martinez, under the	Senate Journal.	281	No time specified.

name of "the supreme chiefs of the two republics of Nicaragua and Costa Rica," dated at Rivas, May 1, 1858, impeaching official agents of the United States, viz: "That hitherto all the official agents of the United States at Nicaragua have been the accomplices and auxiliaries of the invaders, acting as masters, and audaciously hoisting the flag of the United States in all parts where, as at San Juan del Sur, the flag of Nicaragua only ought to float, and openly menaced Central America with an inevitable annexation." Also, whether any apology or explanation that has been given to this government, on the part of said "supreme chiefs," includes a withdrawal of the impeachment so made against "official agents of the United States;" and also that, as far as may be consistent with the public interest, any apology or explanation that the authorities of Costa Rica and Nicaragua may have made with reference to said declaration.

A report of all the correspondence relating to the propositions on maritime law and neutral rights by the Congress of Paris, April 16, 1856.

1860, March 5

Senate Journal.

216

No time specified.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1860, June 12	Report of such despatches as were received at the Department of State from the legation of the United States in London, bearing date of March, 1856; and also of the despatch of Mr. Marcy to Mr. Dallas of the date of April 7, 1856, relative to certain propositions for the settlement of the question between the United States and Great Britain in respect to the colony of the Bay Islands.	Senate Journal.	621	No time specified.
1860, June 19	Report of such portions of the despatches of the minister of the United States at Turin as relates to the occurrence of recent public events in Italy.	Senate Journal.	726	No time specified.
1860, Feb. 16	Report of the correspondence between this government and the republic of Chili with reference to the withdrawal of the exequatur of William Trevitt, consul at Valparaiso.	House Journal.	304	No time specified.
1860, June 23	Report of all papers and correspondence in the Department of State relating to the	House Journal.	1208	No time specified.

1861, Feb.	9	case of Michael Zeiter, a native of France and naturalized citizen of the United States and citizen of Ohio, who has been forced to perform military service in the French army.	House Journal.	290	No time specified.
1861, Feb.	12	A report of the correspondence between the United States and Peru since 1853, on the subject of the free navigation of the Amazon river and its tributaries.	House Journal.	307	No time specified.
1861, July	13	A copy of the letter of John B. Floyd, late Secretary of War, dated November 3, 1860, relating to the claim of William H. DeGroot.	House Journal.	78	Next session.
1861, July	13	A report of all correspondence with the English, French, Spanish, and other governments, with reference to the rights of blockade, privateering, and the recognition of the so-called Confederate States.	House Journal.	78	Next session.
1861, July	31	A report, if any, and what, legislation is necessary for the increase and extension of the trade and commerce of the United States with foreign countries.	House Journal.	185	Next session.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1861, August 3	A report of all correspondence between James E. Harvey and any of the heads of departments, relating to charges against said Harvey growing out of telegraphic despatches to and from said Harvey seized by the government.	House Journal.	236	Next session.
1798, July 6 } 1799, March 2 }	BY THE SECRETARY OF STATE. <i>Annual.</i> Abstracts of the returns made by collectors of the registered seamen of the United States.	Statutes at Large, volume 1.	696 } 729 }	Early in January.
1819, March 2	A list of passengers arriving in the United States from foreign countries during the year 1861.	Statutes at Large, volume 3.	489	Early in February.
1842, Aug. 26	A full and detailed statement of the expenditure of the contingent fund of the State Department, showing to whom payments were made, and for what, &c.	Statutes at Large, volume 5.	527	Commencement of the session.

1842, Aug. 26	Statements of all moneys expended by disbursing officers acting under the orders of the State Department during the year 1861.	Statutes at Large, volume 5.	527	In January.
1818, April 20 } 1842, Aug. 26 }	The names of the clerks and all other persons employed in the Department of State, or any of its offices, during the year 1861, or any part thereof, with the time each was actually employed, and the sum paid each, and whether they have been usefully employed; whether the services of any can be dispensed with without detriment to the public service; and whether the removal of any, and the appointment of others in their stead, is required for the better dispatch of business; and the residence of each at the time of his appointment.	Statutes at Large, volume 3. Statutes at Large, volume 5.	447 525	In January.
1856, Aug. 18	A report of all the fees collected and accounted for by consuls, vice-consuls, commercial agents, and vice-commercial agents.	Statutes at Large, 1st session 34th Congress.	58	During the session.
1856, Aug. 18	A report of the commercial information communicated by the diplomatic and consular officers severally.	Statutes at Large, 1st session 34th Congress.	60	During the session.
1858, April 20	A report of such correspondence as may have taken place between the authorities of this <i>Special.</i>	House Journal.	653	No time specified.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	government and that of the government of Chili, in regard to the detention of the American vessels Good Return and Franklin, at the port of Talcahuano, in the year 1832.			
	BY THE SECRETARY OF THE TREASURY.			
	<i>Annual.</i>			
1789, Sept. 2 } 1800, May 10 }	A report upon the state of the finances, embracing a general view of the revenue and expenditures of the United States for the years 1861 and 1862.	Statutes at Large, volume 1. Statutes at Large, volume 2.	65 79	Early in December.
1789, Sept. 2 } 1800, May 10 } 1842, Aug. 26 }	An estimate of the appropriations necessary to be made for the service of the year ending June 30, 1863, with a statement of the appropriations, heretofore made, applicable to the service of this year; and a statement	Statutes at Large, volume 1. Statutes at Large, volume 2. Statutes at Large,	65 79 537	Commencement of the session.

of the appropriations of former years, with an estimate of those sums which will not be required to defray expenses incurred in a former year; in which are to be specified the sources from which the estimates are derived, and the calculations upon which they are founded, discriminating between such as are conjectural and such as are not conjectural, with the authority for the estimate.		volume 5.	
1791, Dec.	30	House Journal.	68
			Early in December.
1792, April	2	Statutes at Large, volume 1.	249
			In February.
1806, April	10	Statutes at Large, volume 2.	374
1834, June	25	Statutes at Large, volume 4.	681
1834, June	28	Statutes at Large, volume 4.	700
1843, March	3	Statutes at Large, volume 5.	607
			Early in January.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1808, April 21	Statement of contracts and purchases made by collectors for the revenue service in 1861.	Statutes at Large, volume 2.	485	Early in January, and are generally included in one report.
1808, April 21	Statement of contracts made by direction of the Treasury Department in 1861. Statement of the amount of the expenditures for the relief of sick and disabled seamen in 1861.	Statutes at Large, volume 2.	485	
1809, March 3	Statement of the payments made at the treasury in 1861 for the discharge of miscellaneous claims not otherwise provided for.	Statutes at Large, volume 2.	536	No time specified.
1810, May 1	Statement of disbursements from the treasury in 1861 for expenses of intercourse with the Barbary Powers.	Statutes at Large, volume 2.	609	In February.
1817, March 3	Statement of the affairs and condition of the several banks in the District of Columbia on the 31st of December, 1861.	Statutes at Large, volume 3.	387	In January.

1820, Feb.	10	Statement showing the commerce and navigation of the United States for the year ending June 30, 1861.	Statutes at Large, volume 3. House Journal. Statutes at Large, volume 5.	541 608 537	First Monday in December.
1830, May,	26				
1842, Aug,	26				
1831, May	2	Names of applicants for the benefit of the act for the relief of certain insolvent debtors; the amount due; the names of those who may have been released, with the terms of compromise.	Statutes at Large, volume 4. Statutes at Large, volume 4.	469 595	During the session.
1832, July	14				
1832, July	10	Statements of the capital, circulation, discounts, specie, deposits, and condition of the State banks.	House Journal.	1110 } 1117 }	During the session.
1836, April	20	An account of the fund arising from the sale of lands under certain treaties with the Chickasaw Indians.	Statutes at Large, volume 5.	10	During the session.
1842, Aug.	26	A full and detailed statement of the expenditures of the contingent fund of the several offices of the Treasury Department, showing to whom payments were made, for what made, &c.	Statutes at Large, volume 5.	527	Commencement of the session.
1842, Aug.	26	Statement of all moneys expended by disbursing officers acting under orders of the Secretary of the Treasury during the year 1861.	Statutes at Large, volume 5.	527	In January..

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1818, April 20 } 1842, Aug. 26 }	The names of all clerks and other persons who have been employed in the Treasury Department during the year 1861, or any part thereof, with the time each person was actually employed, and the sum paid each; also, whether they have been usefully employed; whether the services of any of them can be dispensed with without detriment to the public service; and whether the removal of any individuals and the appointment of others in their stead is required for the better despatch of business; and the residence of each at the time of his appointment.	Statutes at Large, volume 3. Statutes at Large, volume 5.	447 525	In January.
1844, June 17	Reasons for any changes that may have been made in the depositories of the treasury during the recess of Congress.	Statutes at Large, volume 5.	696	Next session.
1846, Aug. 6	Regulations to give full effect to and secure a just accountability under the warehousing system.	Statutes at Large, volume 9.	55	Next session after any such regulations are made.

1846, Aug.	7	Cases of neglect, evasion, or violation of the 18th and 19th sections of the independent treasury act.	Statutes at Large, volume 9.	64	Commencement of the session.
1846, Aug.	10	Statement of stolen uncanceled treasury notes paid.	Statutes at Large, volume 9.	107	With annual report of Secretary of the Treasury.
1847, Jan.	28	Amount of treasury notes issued under act of January 28, 1847; amount redeemed, purchased, re-issued, &c.	Statutes at Large, volume 9.	122	Commencement of the session.
1849, Mar.	3	A statement of the amount of money expended at each custom-house in the United States, and the number of persons employed, and the occupation and salary of each person.	Statutes at Large, volume 9.	399	During the session.
1853, Mar.	3	A report of the number and names of the persons employed during the last preceding fiscal year upon the Coast Survey and business connected therewith; the amount of compensation of every kind paid them, for what purpose, and the length of time employed; and to report a full statement of all other expenditures made under the direction of the Superintendent of the Coast Survey; also a general chart of the whole coasts of the United States, &c.	Statutes at Large.	209	In December.

LIST OF REPORTS—Continued.

Date of the law or resolution	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	<i>Special.</i>			
1856, Mar. 24	A report relative to the building for a custom-house, court-rooms, and post office at Milwaukee, Wisconsin.	Senate Journal.	199	During the session.
1856, May 16	A report relative to experiments on the coinage of the United States, according to the suggestions of Dr. James T. Barclay, together with the results thereof.	Senate Journal.	336	During the session.
1858, Feb. 1	A report of the annual expense of erecting light-houses and supporting the light-house system since the creation of the Light-house Board, and also the expense for the same number of years preceding the establishment of the said board.	Senate Journal.	147	No time specified.
1858, May 22	A report of specific estimates for "retrenchment and reform" in the expenditures for the several branches of the public service, "to remedy the evils of the excess of expenditures over the means of the govern-	Senate Journal.	503	No time specified.

ment," as mentioned in the report of May 19, 1858; and what efforts have been made, and by whom, since the 4th of March, 1857, to restrain the government to an economical expenditure of the public money, and what have been the results of those efforts.

A report of all the collection districts for the collection of duties on imports, showing, in each district, the amount of revenue annually collected; the name of every person employed, directly or indirectly, connected with the collection of the revenue, either as officer or agent, and the amount of compensation paid to each, and the law under which each officer or agent was appointed; the amount expended for salaries of officers and employés annually; the amount expended for custom-houses or rents of offices and warehouses; also, what custom-houses or ports of entry or delivery can be dispensed with, with a proper regard to economy and the security of the collection of the revenue, and consistently with commercial interests, or what modifications of the laws are necessary for the public interests in relation to the collection of customs, and what number of officers can be dispensed with in each of the collection districts.

1858, June 12

Senate Journal.

697

Next session specified.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1860, Feb. 16	Report of the action, if any, taken under the third and fourth sections of the act of the 3d of March, 1859, entitled "An act making appropriations for sundry civil expenses of the government for the year ending the 30th of June, 1860," relating to the construction of public buildings in the city of Philadelphia, and what additional legislation, if any, is necessary to carry out the purposes of said sections.	Senate Journal.	167	No time specified.
1861, July 18	A report of such facts concerning the revenue marine of the United States as will enable them to take such action as may be expedient concerning the remodelling of the same.	House Journal.	104	Next session.
1861, July 22	A report of the amount of money paid to France for the purchase of Louisiana; the amount paid to Spain for the purchase of Florida; the amount, so far as it can be readily ascertained, expended in the late war with Mexico; the amount expended in	House Journal.	127	No time specified.

the wars with the Indians in Florida; the amount expended in removing the Indians from their homes in the several States in which there is now rebellion against the government to a territory west of the Mississippi; the amount expended in surveying the public lands situated in the same States, in deepening harbors, in removing obstructions in rivers and other water courses, in building fortifications, light-houses, buoys, beacons, dockyards, court-houses, custom-houses, and post offices, in the same States; the amount expended therein for the establishment of mints, navy yards, arsenals, and armories; the number of acres of land still held by the United States within the boundaries of the same States, and the number of acres of land heretofore granted by the United States to any one of those States, or to any corporation therein, for education, public improvements, or for other purposes; and the amount of money expended by the United States in extinguishing Indian titles to lands situated in said States; and the number of acres of such lands to which the State of Georgia became entitled under the contract between that State and the United States.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report	By what authority.	Page.	When expected to be made.
	BY THE FIRST COMPTROLLER OF THE TREASURY. <i>Annual.</i>			
1799, March 2	Statement showing the official emoluments and expenditures of the officers employed in the collection of the customs for the year 1859. NOTE.—This report is usually made to Congress by the <i>Secretary</i> of the Treasury. The law requires it to be made by the <i>Comptroller</i> .	Statutes at Large, volume 1.	708	Early in February.
1809, March 3	Statement of the accounts in the several departments which have remained more than three years unsettled, or on which balances have been due more than three years.	Statutes at Large, volume 2.	536	Early in December.
1817, March 3 } 1843, Jan. 28 }	A list of such officers as have not settled their accounts within the year for moneys advanced one year prior to September 30, 1861, with the proceedings in each case.	Statutes at Large, volume 3.	364	Early in December.

1843, Jan.	28	A similar list required by resolution of the House of Representatives to be made annually. BY THE TREASURER OF THE UNITED STATES. <i>Annual.</i>	House Journal.	274	Early in December.
1789, Sept.	2	Statements of his accounts, with an account of the state of the treasury.	Statutes at Large, volume 1.	66	Early in December.
1836, July	2	Statements of receipts and disbursements of the Post Office establishment.	Statutes at Large, volume 5.	81	During the session.
BY THE SECRETARY OF WAR. <i>Annual.</i>					
1794, April	2	An account of the expenses of the national armories, together with an account of the arms made and repaired therein during the year 1860.	Statutes at Large, volume 1.	352	Early in February.
1803, March	2	A return of the militia of the United States, with their arms, accoutrements, &c.	Statutes at Large, volume 2.	207	Early in February.
1808, April	21	A statement of contracts made by the various branches of the War Department on behalf of the United States during the year 1861.	Statutes at Large, volume 2.	485	Early in January.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1809, March 3	A statement of the expenditures of the moneys appropriated for the contingent expenses of the military establishment for the year 1861, (not contingencies of the War Department.)	Statutes at Large, volume 2.	535	Early in January.
1820, May 1	A statement showing the appropriations for the military service for the year 1861, with the expenditure under each specific head, and the balance of the several appropriations unexpended at the end of the year, with an estimate of the probable demands which may remain on each of such balances.	Statutes at Large, volume 3.	567	Early in February.
1830, Feb. 1 } 1842, Aug. 3 } 1843, Feb. 16 }	The Army Register (printed) for 1861, to which shall be annexed an accurate schedule of the pay and emoluments, with the commutation value thereof, to which the officers of each grade are entitled, and opposite the name of each officer, his annual pay, his allowance for rations, servants, and forage, and all other allowances.	House Journal. House Journal. House Journal.	227 1453 384	In February.
1842, Aug. 26	A full and detailed statement of the expendi-	Statutes at Large,	527	Commencement of

			volume 5.		session.
ture of the contingent funds of the several offices of the War Department for the year 1861, showing to whom payments were made, for what made, &c.					
1842, Aug.	26	Statement of all moneys expended by disbursing officers of the War Department during the year 1861.	Statutes at Large, volume 5.	527	In January.
1818, April 1841, Aug.	20 } 26 }	The names of clerks and all other persons employed in the War Department during the year 1861, or any part thereof, with the time each person was actually employed and the sum paid each, and whether they have been usefully employed; whether the services of any can be dispensed with without detriment to the public service; and whether the removal of any, and the appointment of others in their stead, is required for the better despatch of business; and the residence of each at the time of his appointment.	Statutes at Large, volume 3. Statutes at Large, volume 5.	477 525	In January.
1861, July	8	A report of the plans and estimates to be prepared by the Engineer department for completing the defensive works on the south side of the Potomac, near this city; and also to report upon the expediency of constructing similar works of defence on the northern	House Journal.	51	No time specified.

Special.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	side of this city, (with estimates for the same,) so as to reduce to a minimum the number of troops required for the protection and defence of the capital.			
	BY THE SECRETARY OF THE NAVY. <i>Annual.</i>			
1808, April 21	A statement of the contracts made by the Navy Department on behalf of the United States in 1861.	Statutes at Large, volume 2.	485	Early in January.
March 3	A statement of the expenditure of the money appropriated for the contingent expenses of the naval establishment during the year 1861, (not the contingencies of the department.)	Statutes at Large, volume 2.	536	Early in January.
1815, Dec. 11 } 1843, Feb. 16 }	A printed Navy Register for 1861, showing the annual pay of each officer, with all emoluments and allowances.	Senate Journal. House Journal.	384 384	Early in January.

1820, May	1	A statement showing the appropriations for the naval service for the year 1861, with the expenditure under each specific head, and the balance of the several appropriations unexpended at the close of the year, with an estimate of the probable demands which may remain on each of such balances.	Statutes at Large, volume 3.	567	First of February.
1832, July	10	A report of the receipts and expenditures of the navy hospital fund in 1861.	Statutes at Large, volume 4.	572	During the session.
1818, April 1842, Aug.	20 } 26 }	The names of the clerks and other persons employed in the Navy Department during the year 1861, or any part thereof, with the time each person was actually employed, and the sum paid each, and whether they have been usefully employed; whether the services of any can be dispensed with without detriment to the public service; and whether the removal of any, and the appointment of others in their stead, is required for the better despatch of business; and the residence of each at the time of his appointment.	Statutes at Large, volume 3. Statutes at Large, volume 5.	447 525	In January.
1842, Aug.	26	A full and detailed statement of the expenditure of the contingent fund of the several offices of the Navy Department in 1861, showing to whom payments were made, for what made, &c.	Statutes at Large, volume 5.	527	Commencement of the session.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1848, Aug. 3	A report of the transfers of appropriations from one head to any other head of the appropriations for the naval service for the year 1861.	Statutes at Large, volume 9.	271	During the session.
1852, Aug. 31	A report of the number and names of appointments to the Naval School which have been made; the district and State whence each one comes; the number of existing vacancies, with the congressional district which may be entitled to supply them; and a statement of the order in which the remainder of the congressional districts shall be entitled to all future and accruing vacancies, &c.	Statutes at Large.	102	Every second session.
1858, June 14	A report of the pay and amount of allowances made, by existing laws, to each grade of the commissioned officers of the navy of the United States, and a similar statement as to the corresponding grades in the naval service of Great Britain, France, and Russia, in <i>Special.</i>	House Journal.	1145	Next session of Congress.

tabular form; his opinion as to the policy of increasing the grade or rank of our naval service; the number in each of such increased grade or grades, and the amount of pay, &c., to be allowed to each of such grades; the number of officers of each grade necessary to command our navy as now existing by law, allowing no cruise to be of longer duration than two years, and no leave on shore for more than six months; and the pay, &c., which should be allowed to such sea-going officers, not discriminating between being at sea or on shore under the limitations stated; the number of officers of each grade necessary to command and manage the various establishments on shore of every description connected with our naval service, including the bureaus, &c., specifying each establishment and the number of officers with their grades in each, and the aggregate of all such officers to be of those no longer fit, from any cause, for sea-going service, yet worthy and capable for duty on shore, and to prevent shore duties from being sought by sea-going officers; to report the per centum of decrease from sea-going pay which should be allowed to those on duty on shore; the pay of pension which should be allowed to such officers as are not fit for duty afloat or ashore,

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	without any demerit or fault of their own, and who in all such cases are retired from service and taken from the line of promotion.			
	BY THE POSTMASTER GENERAL.			
	<i>Annual.</i>			
1825, March 5	A statement of the amount of postage accruing in the last year at each of the post offices in the several States and Territories of the United States, classifying the said accounts of postage so accruing by States and Territories.	House Journal.	291 300	During the session.
1825, March 3	A list of such post routes as have not, after the second year, produced the third part of the expenses of transporting the mail on the same.	Statutes at Large, volume 4.	113	In February.
1836, July 2	A report of contracts for the transportation of the mail within the last year, with all the particulars in relation thereto.	Statutes at Large, volume 5.	84	During the session.

1836, July	2	A report of all extra allowances to contractors made during the last year, with all extra expenses incurred, and all curtailment of expenses.	Statutes at Large, volume 5.	84	During the session.
1836, July	2	A report of the incidental expenses of the Post Office Department for the last year.	Statutes at Large, volume 5.	85	During the session.
1836, July	2	A report of the finances of the Post Office Department for the last year.	Statutes at Large, volume 5.	85	During the session.
1836, July	2	A report of the fines and penalties imposed on contractors for failures or other causes.	Statutes at Large, volume 5.	85	During the session.
1836, July	2	A transcript of the record of all offers made for carrying the mails.	Statutes at Large, volume 5.	86	During the session.
1836, July	2	Estimates for the service of the Post Office Department for the year ending June 30, 1863.	Statutes at Large, volume 5.	80	During the session.
1836, July	2	Proceedings in regard to unlawful combinations respecting the making of mail contracts, if any such combinations have been made.	Statutes at Large, volume 5.	87	During the session.
1842, Aug.	26	A full and detailed statement of the expenditure of the contingent funds of the several offices of the Post Office Department, showing to whom payments were made, for what made, &c.	Statutes at Large, volume 5.	527	Commencement of the session.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1842, Aug. 26	Statement of all moneys expended by disbursing agents of the Post Office establishment during the year 1861.	Statutes at Large, volume 5.	527	In January.
1818, April 20 } 1842, Aug. 26 }	The names of the clerks and all other persons employed in the Department of the Postmaster General during the year 1861, or any part thereof, with the time each person was actually employed, and the sum paid each, and whether they have been usefully employed; whether the services of any can be dispensed with without detriment to the public service; and whether the removal of any, and the appointment of others in their stead, is required for the better despatch of business; and the residence of each at the time of his appointment.	Statutes at Large, volume 3. Statutes at Large, volume 5.	447 525	In January. During the session.
1845, March 3	Copies of contracts for carrying the mails between any of the ports of the United States and a port or ports of foreign powers, with a statement of the amount of postage de-	Statutes at Large, volume 5.	749	During the session.

rived under the same.	1856, March 24	A report relative to the building for a custom-house, court-rooms, and post office at Milwaukee, Wisconsin.	Senate Journal.	199	During the session.
<i>Special.</i>					
	1860, Feb. 16	Report of the action, if any, taken under the third and fourth sections of the act of the 3d of March, 1859, entitled "An act making appropriations for sundry civil expenses of the government for the year ending the 30th of June, 1860," relating to the construction of public buildings in the city of Philadelphia, and what additional legislation, if any, is necessary to carry out the purposes of said sections.	Senate Journal.	167	No time specified.
	1860, June 22	Report of the reasons for transferring the transportation of the mails from the Jeffersonville and Indianapolis railroad to the New Albany and Salem railroad, together with all the facts connected with said change that he may deem important, and how said change has affected the public interests.	House Journal.	1191	No time specified.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	BY THE ATTORNEY GENERAL. <i>Special.</i>			
1854, Aug. 4	Report as to the manner of the execution of the Cherokee treaty of New Echota, &c.	Senate Journal.	681	Next session.
1860, Feb. 16	Report of the action, if any, taken under the third and fourth sections of the act of the 3d of March, 1859, entitled "An act making appropriations for sundry civil expenses of the government for the year ending the 30th of June, 1860," relating to the construction of public buildings in the city of Philadelphia, and what additional legislation, if any, is necessary to carry out the purposes of said sections. BY THE SECRETARY OF THE INTERIOR. <i>Annual.</i>	Senate Journal.	167	No time specified.
1808, April 21	Statement of the contracts made by direction	Statutes at Large,	484	Early in January.

1842, Aug. 26	of the Department of the Interior. A full and detailed statement of the expenditure of the contingent fund of the several offices of the Department of the Interior, showing to whom payments were made, for what made, &c.	volume 2. Statutes at Large, volume 5.	527	Early in January; and are usually included in one report.
1818, April 20 } 1842, Aug. 26 }	The names of all clerks and other persons who have been employed in the several offices of the Department of the Interior during the year 1861, or any part thereof, with the time each person was actually employed, and the sum paid each; also, whether they have been usefully employed; whether the services of any of them can be dispensed with without detriment to the public service; and whether the removal of any, and the appointment of others in their stead, is required for the better despatch of business; and the residence of each at the time of his appointment.	Statutes at Large, volume 3. Statutes at Large, volume 5.	447 525	Early in January; and are generally included in one report.
1830, May 29	A list of applicants for pensions, or for increase of pensions, whose cases are not embraced by the laws, but which ought to be granted.	Statutes at Large, volume 4.	430	In January.
1832, July 10	A report of the receipts and expenditures of the navy pension fund and privateer pen-	Statutes at Large, volume 4.	572	During the session.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
1789, Aug. 7	sion fund in 1861; the names of pensioners, and the amount of their pensions, respectively.	Statutes at Large, volume 1.	50	Commencement of the session; usually accompanies the annual message of the President.
1789, Sept. 2	A report upon the condition of the General Land Office, the amount of the sales of the public lands, and an account of the surveys made of the same during the year 1861.	Statutes at Large, volume 1.	66	In January.
1854, Aug. 2	<i>Special.</i> Report upon the nature of the title of the Christian Indians to lands in the State of Ohio.	Senate Journal.	630	Next session of Congress.
1857, Jan. 26	A report of the number of the military and	Senate Journal.	128	No time specified.

other reservations for the settlements of Indian tribes that have been made, the size of each, and the number of Indians upon each; also, the number of white persons upon each, and their compensation, the annual cost to the United States of each reservation, and whether, by the existing regulations, these reservations are worked in common by the Indians for their common benefit, or what means, if any, are used to secure to each Indian the separate enjoyment of the proceeds of his own labor; also, what system has been adopted to induce the Indians to labor upon these reservations, the practical results of that system so far, and whether the proceeds of those reservations have been directed exclusively to the purpose for which they were made.			Senate Journal.	425 No time specified.	
Report of the amount due the Chippewas of the Mississippi and Lake Superior, under the ninth article of the treaty made with those Indians September 30, 1854.			Senate Journal.	681 Next session of Congress.	
Report of an estimate for completing the north front of the Patent Office building with a portico, according to the plan of the architect.			House Journal.	864 No time specified.	

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	or other bands of Indians who were parties to the treaties of the 26th and 27th of September, 1833, at Chicago, and who remained in the State of Michigan, either in money or goods, under the stipulations of the treaty made at the time and place aforesaid with the united nation of Chippewa, Ottawa, and Pottawatomie Indians; also the time and place of payment, and the parties to whom paid.			
1861, Jan. 14	A report of copies of all deeds made by the several southern States to the United States for lands to be used for forts, arsenals, dock-yards, navy yards, custom-houses, post offices, hospitals, and other public buildings, from the commencement of the government to the 1st of January, 1861.	House Journal.	186	No time specified.
1861, Feb. 11	A report of the amount of damages suffered by George W. Johnson in consequence of the occupancy of his lands in the Territory of Washington by the War Department.	House Journal.	296	No time specified.

1861, July 15	A report of the amount of business transacted in the several circuit courts of the United States; the number of cases docketed in each circuit and disposed of each year from the 1st of January, 1850, to the 1st of January, 1860; the number of days each supreme judge was occupied in the several circuits during each year; the aggregate amounts involved in litigation in each circuit, and the number of cases undisposed of on the second circuit dockets on the 1st of January, 1860.	House Journal.	88	Next session.
1837, March 3	BY THE COMMISSIONER OF PATENTS. A list of all patents granted for the preceding year for inventions and improvements; also, a list of patents which have expired during the same periods.	Statutes at Large, volume 5.	195	In January.
	Agricultural statistics and expenditures of \$1,000 for agricultural purposes.	Statutes at Large, volume 5.	354	In January; accompanies the annual report.
1856, Aug. 18	A report of the various kinds and amounts of seeds purchased and to be purchased, from whom and where obtained, and the cost of the same.	Statutes at Large, 1st session 34th Congress.	89	During the session.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report.	By what authority.	Page.	When expected to be made.
	BY THE COMMISSIONER OF PUBLIC BUILDINGS. <i>Annual.</i>			
1829, March 3	The application of the appropriations for 1861, the number of public lots sold, &c., and the state of the buildings and grounds.	Statutes at Large, volume 4.	363	In December.
1838, April 16	Copies of all contracts made in his office for materials furnished or to be furnished, or for labor performed or to be performed, &c.	House Journal.	84	Commencement of the session.
1840, July 21	The manner in which all appropriations for the public buildings and grounds have been applied. BY THE SECOND AUDITOR. <i>Annual.</i>	Statutes at Large, volume 6.	815	Commencement of the year.
1822, May 6 } 1834, June 30 }	Copies of the accounts of Indian agents, superintendents, and others charged with the disbursement of money, goods, or effects of any kind, for the benefit of Indians.	Statutes at Large, volume 3. Statutes at Large, volume 4.	683 738	In February.

BY THE COMMISSIONER TO CHINA.					
<i>Annual.</i>					
1848, Aug.	11	A report of the fees for judicial services, and the expenses incident to those services, for the year 1861.	Statutes at Large.	279	During the session.
BY THE SECRETARY OF THE SENATE AND THE CLERK OF THE HOUSE OF REPRESENTATIVES, (EACH TO HIS HOUSE, RESPECTIVELY.)					
<i>Annual.</i>					
1836, May	9	A full and detailed statement of the expenditure of the contingent fund of their houses, respectively, showing to whom payments were made, for what made, &c.	Statutes at Large, volume 5.	25	Commencement of the session.
1842, Aug.	26		Statutes at Large, volume 5.	525	
1842, Aug.	26	The names of the clerks and all other persons employed in the service of their respective houses during the year 1861, or any part thereof, with the time each person was actually employed, and the sum paid each, and whether they have been usefully employed; whether the services of any can be dispensed with without detriment to the public service; and whether the removal of any, and the appointment of others in their stead, is required for the better despatch of business.	Statutes at Large, volume 5.	525	In January.

LIST OF REPORTS—Continued.

Date of the law or resolution.	Officer, and nature of the report	By what authority.	Page.	When expected to be made.
1842, March 7	BY THE CLERK OF THE HOUSE OF REPRESENTATIVES. <i>Annual.</i> A report showing distinctly the quantity and cost of all the stationery used by the House and the Clerk's office. BY THE CORPORATION OF WASHINGTON. <i>Annual.</i>	House Journal.	495	Commencement of the session.
1832, May 31	A statement of the cost of the Washington canal, with the annual expenditures and receipts from the canal. BY THE COURT OF CLAIMS.	Statutes at Large, volume 4.	523	In January.
1855, Feb. 24	A report of cases upon which they shall have finally acted.	Statutes at Large, 2d session 33d Congress.	613	In December, and monthly during sessions.

LIST OF REPORTS—Continued.

CONTINGENT REPORTS.

If a transfer of the appropriations made for any of the departments or branches of the government shall have been made, by order of the President of the United States, during the recess of Congress, it is made the duty of the head of the department in which such transfer shall have been made to report to Congress, during the first week of the session, a special account of the moneys thus transferred, with their application.

See act 3d March, 1809, Statutes at Large, vol. 2, p. 535.

See act 3d March, 1817, Statutes at Large, vol. 3, p. 390.

See act 1st May, 1820, Statutes at Large, vol. 3, p. 568.

See act 30th June, 1834, Statutes at Large, vol. 4, p. 742.

If any State refuse to cede to the United States jurisdiction over lands purchased by the United States for public purposes, the head of the executive department making the application is directed immediately to report the same to Congress.

Statutes at Large, vol. 5, p. 468.

The several heads of departments, in communicating estimates of appropriations and expenditures to Congress, or to committees of Congress, are required to specify the sources from which the estimates are derived, with the calculations upon which founded, and to discriminate between such as are conjectural and such as are framed upon specific information; also, to specify the laws, treaties, or other authority for the expenditure.

If the head of a department consolidate appropriations "for the contingencies of his department and its several bureaus," he shall, in his annual report to be made to Congress, state the portion of it expended for the department proper, and for each bureau.

Statutes at Large, vol. 5, p. 686.

LIST OF REPORTS—Continued.

If, in submitting to Congress the annual estimates from the several executive departments of the government, it shall be found that the usual items of such estimates vary materially in amount from the appropriations ordinarily asked for the object named, and especially from the appropriation granted for the same objects for the year next preceding, and whenever new items not theretofore usual shall be introduced into such estimates for any year, the estimates shall be accompanied by minute and full explanations, from the head of the appropriate department, of all such variations and new items, setting forth the reasons and grounds upon which the amounts are required, and the different items added; and whenever any such estimate, whether annual or special, shall ask an appropriation for any new specific expenditure, such as the construction of a fort, the erection of a custom-house or other public building, or the construction of any other public work requiring a plan before the building or work can be properly completed, every such estimate shall be accompanied by a full plan and detailed estimates of the cost of the whole work; and all subsequent estimates for every such work shall give the original estimated cost, the aggregate amount theretofore appropriated for the same, and the amount actually expended thereupon, as well as the amount asked for the current year for which such estimates shall be made; and whenever any such subsequent estimate shall ask for an appropriation for any such work beyond the original estimate of the cost, the full reasons for the excess, and the extent of the anticipated excess, shall be also stated.

See Statutes at Large, vol. 5, p. 693.

NATIONAL ARMORY.

RESOLUTIONS

FROM

THE LEGISLATURE OF IOWA,

IN RELATION TO

The establishment of an arsenal and armory at Rock Island, in the State of Illinois.

FEBRUARY 5, 1862.—Laid on the table and ordered to be printed.

JOINT RESOLUTION.

Be it resolved by the house of representatives, (the senate concurring,) That our senators and representatives in Congress from this State be requested to use their utmost exertions to procure the establishment, at the earliest practicable time, by the government of the United States, of an arsenal and armory on the island of Rock Island, in the State of Illinois.

Resolved, That the secretary of state be directed to forward to each of our senators and representatives in Congress a copy of these resolutions.

RUSH CLARKE,

Speaker of the house of representatives.

JNO. R. NEEDHAM,

President of the senate.

Approved January 23, 1862.

SAMUEL J. KIRKWOOD.

STATE OF IOWA, ss.

I, Elijah Sells, secretary of state, hereby certify that the foregoing is a true copy from the original roll on file in my office.

In testimony whereof, I have hereunto set my hand and affixed the great seal of the State of Iowa.

Done at Des Moines, this 23d day of January, 1862.

[L. S.]

ELIJAH SELLS.

BY NATIONAL ALMOND

RESOLUTIONS

AND

THE LEGISLATURE OF IOWA

IN SESSION AT

The establishment of an arsenal and armory at Rock Island, in the State of Illinois.

Enacted January 2, 1862—1st of the 37th Congress.

JOHN R. KIRKWOOD

The following by the House of Representatives (the Senate concurring) That one senator and representative in Congress from this State be requested to use their utmost exertions to procure the establishment at the earliest practicable time, by the Government of the United States of an arsenal and armory on the island of Rock Island, in the State of Illinois.

Resolved, That the secretary of state be directed to forward to each of our senators and representatives in Congress a copy of these resolutions.

RUSH CLARKE

Speaker of the House of Representatives

JNO. R. KIRKWOOD

President of the Senate

Approved January 22, 1862

SAMUEL J. KIRKWOOD

State of Iowa, ss.
I, Elijah Bell, secretary of state, hereby certify that the foregoing is a true copy from the original roll on file in my office.
In testimony whereof, I have hereunto set my hand and affixed the great seal of the State of Iowa.

Done at Des Moines, this 23d day of January, 1862.
ELIJAH BELL

BYINGTON vs. VANDEVER.

ADDITIONAL PAPERS

BY THE CONTESTANT IN

THE IOWA CONTESTED ELECTION CASE

OF

Byington vs. Vandever.

FEBRUARY 5, 1862.—Referred to the Committee of Elections, and ordered to be printed.

IOWA CONTESTED ELECTION.

BYINGTON vs. VANDEVER.

Is a colonel of militia, while in the actual military service of the United States, constitutionally disqualified for a seat in Congress?

ADDITIONAL AUTHORITIES BY THE CONTESTANT.

A principal question presented by this case is, whether a colonel of volunteer militia, in the actual service of the general government, is an "*officer under the United States*," within the meaning of the 6th section of the 1st article of the Constitution?

In support of the affirmative of the proposition the following additional authorities are presented by the claimant:

I.

What constitutes an "office?"

In *Bacon's Abridgement*, page 280, title "*officer*," is the following, viz:

"It is said that every man is a *public officer* who has any *duty* concerning the public."

"Officers are another species of incorporeal hereditaments, and they consist in a right, and correspondent duty, to execute a *public* or private trust."—(3 *Kent's Com.*, 454.)

"An *office* is a right to exercise a public or private *employment*, and to take the fees and emoluments belonging to it."—(*Cruise's Digest*, 2, p. 36.)

"The term '*office*' implies an authority to exercise some portion of the sovereign power, either in making, administering, or *executing* the laws."—(3 *Greenl.*, 481.)

"A person may lose an office by the *acceptance of another office*, incompatible with that which he already holds. And all offices are incompatible and inconsistent *where they interfere with each other*; for that circumstance creates a presumption that they cannot both be executed *with due impartiality*."—(2 *Cruise's Digest*, 115.)

II.

But, *more specifically*, what is an "*office*," within the meaning of the last clause of the said sixth section?

A correct conclusion as to the *scope* and *meaning* of the said clause will be materially aided by reference to the numerous *mutations* which the section underwent, and to the debates thereupon in the convention of 1787. They were as follows, viz:

On the third business day of the convention—May 29, 1787—Mr. Edmund Randolph "laid before the house" fifteen propositions "concerning the establishment of a national government," in the fifth of which it was proposed that representatives in Congress should "be ineligible to any office established by a particular State, or under the authority of the United States, (except those particularly belonging to the functions of the second branch,) during the term of service, and for the space of — after the expiration thereof.—(*Elliot's Debates*, vol. 1, p. 144.)

On the same day Mr. Charles Pinckney presented a "*draft of a federal government*," one clause of the fifth article of which read as follows, viz:

"The members of each house shall not be eligible or capable of holding any office under the Union during the time for which they have been respectively elected, nor the members of the Senate for one year after."

On the 19th of June, 1787, Mr. Randolph's said propositions were reported to the convention "as altered, amended and agreed to, in Committee of the Whole House," in the third resolution of which it was provided that "members of the first branch of the national legislature" should be elected by the people, and be "ineligible to any office established by a particular State, or under the authority of the United States (except those peculiarly belonging to the first branch) during the term of service, and under the national government, for the space of one year after its expiration."—(1st *Debates*, 181.)

On the 23d day of June, this section being under consideration, "it was moved and seconded to add, after the words '*ineligible to*,' the words '*and incapable of holding*;' which passed in the affirmative.—(*Page* 187.)

On the same day "Mr. Madison renewed his motion, yesterday made and waived, to render the members of the first branch ineligible during their term of service, and for one year after, *to such offices only* as should be established, or the emolument augmented by

the legislature of the United States, during the time of their being members.”

And after a spirited debate the question upon agreeing to the motion of Mr. Madison was lost; yeas 2, nays 8; Massachusetts being divided.—(*Debates*, vol. 5, pp. 230–233.)

On the 26th of July, 1787, volume 1, page 221, there were referred twenty-three “resolutions of the convention” to a “committee of detail, for the purpose of *reporting a constitution*.” The last clause of the third of those “resolutions” provided that members of the first branch [representatives] should be “ineligible to, and incapable of holding, any office under the authority of the United States (except those peculiarly belonging to the functions of the first branch) during the term of service of the first branch.”

On the sixth of August Mr. Rutledge, from this “committee of detail,” reported—

“*A draft of a Constitution.*”

The ninth section, sixth article, of this last-named instrument, reads as follows, viz:

“The members of each house shall be ineligible to, and incapable of holding, any office under the authority of the United States during the time for which they shall respectively be elected; and the members of the Senate shall be ineligible to, and incapable of holding, any such office for one year afterwards.”—(*Vol. 1, p. 225.*)

AUGUST 14.

“It was moved and seconded to amend the ninth section of the sixth article by adding the following clause after the words ‘be elected:’ ‘except in the army or navy thereof; but in that case *their seats shall be vacated.*’”

“Before the question was taken on the last amendment, it was moved and seconded to postpone the consideration of the ninth section of the sixth article until the powers to be vested in the Senate are ascertained; which passed unanimously in the affirmative.”—(*Page 242.*)

SATURDAY, SEPTEMBER 1.

Mr. Brearly, from the committee of eleven, to whom were referred, yesterday, the postponed part of the Constitution, and parts of reports not acted upon, made the following partial report:

That in lieu of article 6, section 9, the words following be inserted, to wit:

“The members of each house shall be ineligible to any *civil* office under the authority of the United States during the time for which they shall respectively be elected; and no person holding an office under the United States shall be a member of either house during his continuance in office.”—(*Vol. 5, page 503.*)

MONDAY, SEPTEMBER 3.

“Mr. Pinckney moved to postpone the report of the committee of eleven, (see the 1st of September,) in order to take up the following:

“The members of each house shall be incapable of holding any office under the United States for which they, or any other for their benefit, receive any salary, fees, or emoluments of any kind, and the acceptance of such office shall vacate their seats respectively.”

“He was strenuously opposed to an *ineligibility* of members to office, and therefore wished to *restrain the proposition* to a mere *incompatibility*. He considered the eligibility of members to the legislature, to the honorable offices of government, as resembling the policy of the Romans in making the temple of virtue the road to the temple of fame.

“On this question—

“Pennsylvania, North Carolina—ayes 2; New Hampshire, Massachusetts, Connecticut, New Jersey, Maryland, Virginia, South Carolina, Georgia—noes 8.

“Mr. King moved to insert the word ‘created’ before the word ‘during’ in the report of the committee. This, he said, would exclude the members of the first legislature under the Constitution, as most of the offices would then be created.

“Mr. Williamson seconded the motion. He did not see why members of the legislature should be ineligible to *vacancies* happening during the term of their election.

“Mr. Sherman was for entirely incapacitating members of the legislature. He thought their eligibility to offices would give too much influence to the Executive. He said the incapacity ought at least to be extended to cases where salaries should be *increased*, as well as *created*, during the term of the member. He mentioned also the expedient by which the restriction could be evaded, to wit: an existing officer might be translated to an office created, and a member of the legislature be then put into the office vacated.

“Mr. Gouverneur Morris contended that the eligibility of members to office would lessen the influence of the Executive. If they cannot be appointed themselves, the executive will appoint their relations and friends, retaining the service and votes of the members for his purpose in the legislature; whereas the appointment of the members deprives him of such an advantage.

“Mr. Gerry thought the eligibility of members would have the effect of opening batteries against good officers, in order to drive them out, and make way for members of the legislature.

“Mr. Graham was in favor of the amendment. Without it, we go further than has been done in any of the States, or, indeed, any other country. The experience of the State governments, where there was no such ineligibility, proved that it was not necessary; on the contrary, that the eligibility was among the inducements for fit men to enter into the legislative service.

“Mr. Randolph was inflexibly fixed against inviting men into the legislature by the prospect of being appointed to office.

“Mr. Baldwin remarked that the example of the States was not applicable. The legislatures there are so numerous that an exclusion of their members would not leave proper men for offices. The case would be otherwise in the general government.

“Colonel Mason. Instead of excluding merit, the ineligibility will keep out corruption by excluding office hunters.

“Mr. Wilson considered the exclusion of members of the legislature as increasing the influence of the Executive, as observed by Mr. Gouverneur Morris, at the same time that it would diminish the general energy of the government. He said that the legal disqualification for office would be odious to those who did not wish for office, but did not wish either to be marked by so degrading a distinction.

“Mr. Pinckney. The first legislature will be composed of the ablest men to be found. The States will select such to put the government into operation. Should the report of the committee, or even the amendment, be agreed to, the great offices, even those of the judiciary department, which are to continue for life, must be filled, while those most capable of filling them will be under a disqualification.

“On the question on Mr. King’s motion—

“New Hampshire, Massachusetts, Pennsylvania, Virginia, North Carolina—ayes 5; Connecticut, New Jersey, Maryland, South Carolina, Georgia—noes 5. The amendment being thus lost by the equal division of the States.

“Mr. Williamson moved to insert the words ‘created, or the emoluments whereof shall have been increased,’ before the word ‘during,’ in the report of the committee.

“Mr. King seconded the motion. On the question—

“New Hampshire, Massachusetts, Pennsylvania, Virginia, North Carolina—ayes 5; Connecticut, New Jersey, Maryland, South Carolina—noes 4; Georgia divided.”

The last clause, rendering a seat in the legislature and an office incompatible, was agreed to, nem. con.

The report, as amended and agreed to, is as follows:

“The members of each house shall be ineligible to any *civil* office under the authority of the United States created, or the emoluments whereof shall have been increased, during the time for which they shall, respectively, be elected. And no person holding *any* office under the United States shall be a member of either house during his continuance in office.

“Adjourned.”

SATURDAY, SEPTEMBER 8.

“It was moved and seconded to appoint a committee of five to revise the style of, and arrange, the articles agreed to by the House; which passed in the affirmative.

“And a committee was appointed, by ballot, of the Hons. Mr. Johnston, Mr. Hamilton, Mr. G. Morris, Mr. Madison, and Mr. King.”—(*Vol. 1, page 295.*)

WEDNESDAY, SEPTEMBER 12.

“The Hon. Mr. Johnson, from the committee of revision, informed the House that the committee were prepared to report the CONSTITUTION, as revised and arranged. The report was then delivered at the secretary’s table.”—(Page 297.)

In this “revised draft of the Constitution,” the second clause of the sixth section of the first article, reads as it now stands, viz:

“No senator or representative shall, during the time for which he was elected, be appointed to any civil office, under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased, during such time; and no person holding any office under the United States shall be a member of either house during his continuance in office.”—(Page 399.)

Thus it is seen that this section passed through a dozen changes; and a careful examination and *comparison* of the foregoing extracts, and especially of the reported debates upon the various stages of the development of this clause, as contained in the fifth volume of “Elliot’s Debates,” will clearly demonstrate the ultimate idea of the convention of *excluding from a seat in Congress every person who, in any shape or form, civil or military, exercises an office under the power and patronage of the United States.*

And the protracted struggle which resulted in this explicit prohibition is well described by the letter of the delegate, Luther Martin, to the speaker of the house of delegates of Maryland, “relative to the proceedings of the general convention,” from which the following extract is taken on page 365, volume 1, Elliot’s Debates, viz:

“In the sixth section of the first article it is provided that senators and representatives may be appointed to *any civil office* under the authority of the United States, except such as shall have been created, or the emoluments of which have been increased, during the time for which they were elected. Upon this subject, sir, there was a great diversity of sentiment among the members of the convention. As the propositions were reported by the Committee of the Whole House, a senator or representative could not be appointed to any office under a particular State, or under the United States, during the time for which they were chosen, nor to any office under the United States until one year after the expiration of the time. It was said, and, in my opinion, justly, that no good reason could be assigned why a senator or representative should be incapacitated to hold an office in his own [State] government, since it can only bind him more closely to his State, and attach him the more to its interests, which, as its representative, he is bound to consult and securely guard, as far as is consistent with the welfare of the Union; and therefore, at most, would only add the additional motive of gratitude for discharging his duty; and, according to this idea, the clause which prevented senators or delegates from holding offices in their own States was rejected by a considerable majority. But, sir, *we sacredly endeavored to preserve all that part of the resolution which prevented them from being eligible to offices under the United States*, as we consider it *essentially neces-*

sary, to preserve the *integrity, independence, and dignity* of the legislature, and to secure its members from corruption.

"I was in the number of those who were extremely solicitous to *preserve this part of the report*; but there was a powerful opposition, made by such who wished the members of the legislature to be eligible to offices under the United States. Three different times did they attempt to procure the alteration, and as often failed, a majority firmly adhering to the resolution as reported by the committee. However, an alteration was at length, by dint of perseverance, obtained even within the last twelve days; for it happened after I left Philadelphia. As to the exception, that they cannot be appointed to offices created by themselves, or the emoluments of which are by themselves increased, it is certainly of little consequence," &c.

"*It is true the acceptance of an office vacates their seat,*" &c.

Conclusions.—It is thus seen that through all the various mutations of the proposition, from its introduction, on the 29th of May, up to the 14th of August, the effort was to *prohibit the appointment of members to other offices*, either absolutely or positively, *leaving the representative's seat untouched*; but that, upon this last day, an extended debate occurred upon the general subject, (vol. 5, pp. 420 to 425,) which resulted in a change, during which—

"Mr. Gouverneur Morris put the case of war, and the citizen most capable of conducting it happening to be a member of the legislature. What might have been the consequence of such a regulation at the commencement or even in the course of the late contest for our liberties."

He thereupon "moved to insert, after 'office,' 'except officers in the army or navy; but in that case, *their seats shall be vacated.*'"

"Mr. Randolph had been, and should continue, uniformly opposed to the striking out of the clause, as opening a door for influence and corruption. No arguments had made any impression on him but those which related to the case of war, and a co-existing incapacity of the fittest commanders to be employed. He *admitted great weight in those, and would agree to the exception proposed by Gouverneur Morris.*"

Up to this period in the proceedings of the convention the idea had steadily prevailed of imposing an absolute ineligibility as to *all* offices, (leaving the member's seat intact;) but from henceforth the two alternative propositions which were finally adopted rapidly assumed the shape in which they now appear in the Constitution, to wit:

First. A qualified ineligibility *as to CIVIL offices created by the members, &c.*; and,

Secondly. Eligibility as to all other offices, *with a consequent forfeiture of the member's seat* who accepts such office.

We have thus seen that it was purely and directly in reference to the suggestion (by Gouverneur Morris) of *military officers* that the last and prohibitory clause of the sixth section of the first article was finally inserted, and, therefore, that the case of Colonel Vandever is within the historical, as well as literal, import of the Constitution.

III.

The main question in this case is thus narrowed down to the single proposition:

Is a colonel of militia, when in the actual military service of the general government, an officer "under the United States," within the meaning of the Constitution?

To test the matter more fully, the following questions present themselves under the law, as heretofore quoted, namely:

- 1st. What are his duties?
- 2d. Whom do they concern?
- 3d. What authority imposes them?
- 4th. What government pays the emoluments consequent upon them?
- 5th. Are they "incompatible" with the diligent and impartial discharge of the duties of a representative in Congress?

Full and satisfactory answers to all these questions are obtainable from the congressional legislation of July last, from that clause of the constitution which makes the President commander of the militia when called into the service of the United States, and from the orders under which Colonel Vandever is now acting; and said answers may be thus stated, upon authority of the extracts which hereinafter follows, that is to say:

1st. His "*duties*" are to "aid in enforcing the laws and protecting the public property," under the commands of the President.

2d. These duties "*concern*" the entire body of the nation.

3d. They are "*imposed*" upon him by the authority of Congress.

4th. They are "*paid for*" by the United States.

5th. In the present case the "incompatibility" has been *shown* by the member being *ordered*, by a superior United States officer, *from his seat in the House*, and his yielding obedience to said order.

[Extracts.]

AN ACT to authorize the employment of volunteers to aid in enforcing the laws and protecting public property. Approved July 22, 1861

SECTION 2. "That the said volunteers shall be subject to the rules and regulations governing the *army* of the United States, and that they *shall be formed by the President* into regiments of infantry," &c.

"Each regiment of infantry shall have *one colonel*," &c.

SEC. 4. * * * "The governors of the States shall *commission* the field, staff, and company officers," &c.

SEC. 5. "That the *officers*, non-commissioned officers and privates, organized as above set forth, shall, in all respects, *be placed on the footing*, as to pay and allowances, of similar corps of the *regular army*," &c.—(Page 269.)

SEC. 10. * * * "Upon such report, [of a military board,] if adverse to such officer, and approved by the President, the *commission of such officer shall be vacated*," &c.

* * * * *

* * * "And vacancies above captain shall be filled by the

votes of the commissioned officers of the regiment, *and all officers so elected shall be commissioned by the respective governors of the States, or by the President of the United States,*" &c.—(Page 270.)

Constitution of the United States.

ART. 2, SEC. 2. "The President shall be commander-in-chief of the army and navy of the United States, *and of the militia of the several States when called into the actual service of the United States.*"

AN ACT *in addition* to the foregoing act. Approved July 25, 1861.

SEC. 2. "That the volunteers authorized by this act shall be armed as the President may direct; they shall be *subject to the rules and articles of war*, and shall be upon the footing, *in all respects*, with similar corps of the *United States army*, and shall be mustered into the service for 'during the war.' "—(Page 274.)

AN ACT to provide for the suppression of rebellion, &c. Approved July 29, 1861.

SEC. 3. "That the militia so called into the service of the United States, shall be subject to the same rules and articles of war as the *troops of the United States,*" &c., and "shall, during their time of service, be *entitled to the same pay, rations, and allowances for clothing, as are or may be established by law for the army of the United States.*"

"That every *officer, non-commissioned officer or private*, of the militia, *who shall fail to obey the orders of the President of the United States* in any of the cases before recited, shall forfeit a sum not exceeding a year's pay," &c.

From the foregoing it is perfectly clear that the *status* of a colonel of militia, after being mustered into the service of the government, is that of an *officer of the army of the United States*, and that every military and legal consequence attaches to his case, as such, whether he is to be regarded at the same time as a State officer or not. Possibly he may retain, in abeyance, his character of colonel of militia; but, undeniably, he is "*an officer under the United States,*" performing its exclusive service, commanded solely by its Executive, and subject absolutely to its rules and articles of war.

of the Commission of the Government, and all other
as related shall be considered by the Commission of the
Government in the same manner as the Commission of the

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Government in the same manner as the Commission of the

AN ACT to amend the Constitution of the United States

Section 2. That the Commission of the Government
shall be composed of the President, the Vice President,
and the members of the Commission of the Government,
and shall be considered by the Commission of the

Government in the same manner as the Commission of the
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Section 3. That the Commission of the Government
shall be composed of the President, the Vice President,
and the members of the Commission of the Government,
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Section 4. That the Commission of the Government
shall be composed of the President, the Vice President,
and the members of the Commission of the Government,
and shall be considered by the Commission of the
Government in the same manner as the Commission of the
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Section 5. That the Commission of the Government
shall be composed of the President, the Vice President,
and the members of the Commission of the Government,
and shall be considered by the Commission of the
Government in the same manner as the Commission of the
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Section 6. That the Commission of the Government
shall be composed of the President, the Vice President,
and the members of the Commission of the Government,
and shall be considered by the Commission of the

ARMORY IN THE NORTHWEST.

RESOLUTION

OF

THE STATE OF MICHIGAN,

RELATIVE TO

An armory in the northwest.

FEBRUARY 11, 1862.—Referred to the select committee on national armory, and ordered to be printed.

JOINT RESOLUTION relative to an armory in the northwest.

Resolved by the senate and house of representatives of the State of Michigan, That there being now left in the country but one government manufactory of arms, and that almost upon the seaboard, it is expedient and important that another should be established at some point in the northwest easily accessible from all parts of this great section of the country, and that the senators of this State in Congress be, and they are hereby, instructed, and its representatives are requested, to exert all their proper influence to secure the establishment of an armory by the general government at some point in the northwestern States.

Resolved, That for accessibility from all sections, both by land and water, and also in other respects, Chicago presents advantages over any other locality in the northwest, and which clearly designate that city, or its immediate vicinity, as the most eligible place for the location of such a manufactory by the government.

Resolved, That the governor be, and he is hereby, requested to transmit copies of the foregoing resolutions to each of the senators and representatives of this State in Congress.

HENRY T. BACKUS,

President of the Senate.

DEXTER MUSSEY,

Speaker of the House of Representatives.

Approved January 18, 1862.

AUSTIN BLAIR.

GEORGE B. SIMPSON.

MEMORIAL

OF

GEORGE B. SIMPSON,

ASKING

*That he may be permitted to appear before the select committee on the
loyalty of government employés.*

FEBRUARY 10, 1862.—Referred to the select committee on the loyalty of government
employés.

FEBRUARY 12, 1862.—Ordered to be printed.

*To the honorable the members of the House of Representatives in Congress
assembled :*

MEMBERS : Your petitioner, the undersigned, begs leave to represent that in the issue of the "New York Tribune" newspaper of the 28th of January instant his name appears as one of the disloyal clerks of the Treasury Department of this government.

Your petitioner would further represent that his attention was called to the affidavit of John A. Miller, his accuser, as given before the Potter investigating committee in September last, by the committee appointed by the Secretary of the Treasury to investigate the charges brought against the clerks and other employés of that department, on the 4th day of December, 1861.

Your petitioner would further represent that he immediately placed in the hands of the treasury committee the evidence of his loyalty, and that said committee not only retained him in his place in the Treasury Department, but recommended him for promotion in office; therefore, at the time of the publication above referred to, there existed no charge of disloyalty against him.

Your petitioner would further represent that the oath of the aforesaid John A. Miller is totally false and designedly malicious, and that, instead of operating against this government, he (the undersigned) has been uniformly endeavoring to expose this damnable conspiracy for more than six years ! He commenced in the Indian war in Oregon and Washington Territory in 1855-'56 ; he attempted to approach

President Pierce, but failed to get a hearing for the reason that the principal conspirator was *his* Secretary of War; he approached the administration of President Buchanan, and was more successful; he succeeded in inducing President Buchanan to move a detachment of the United States army against the rebellious Mormons; but he failed to crush that rebellion, which was but a prelude to the present greater rebellion, for the simple reason that Jeff. Davis and his coadjutors controlled the cabinet of President Buchanan. The reason is obvious, namely: they (the conspirators) did not wish a *precedent* which should tell against them when they should attempt to overthrow the supreme government of the United States.

Your petitioner would further represent that he fully apprised President Buchanan of the conspiracy against this government, but that he could not avert impending events.

Your petitioner would further represent that he informed the Capitol police of the design of the conspirators to seize this Capitol more than a year since; that he placed a copy of said information in the hands of the Hon. John A. Dix, then Secretary of the Treasury, and that he said and did every act which, in his judgment, would not only preserve but perpetuate this government.

Therefore, your petitioner could not only not have *said*, but could not have conceived, the thought imputed to him by the oath of John A. Miller.

Your petitioner would further represent that he still possesses the information above referred to, and that he will communicate it to the House or to the Potter investigating committee, with the understanding, however, that the original papers thus communicated shall be returned to him.

Your petitioner would further represent that, in view of the fact of his name having appeared in print as a disloyal citizen of the United States, which disloyalty was evolved by and through the Potter investigating committee of the House of Representatives, and therefore carries with it the weight and influence of said committee, and that there is no other mode of counteracting the erroneous and baneful influence of said report except by the action of said committee or the House of Representatives—

He therefore prays that your honorable body cause to be brought before the House all the evidences now in his possession and hereinbefore referred to, and that he be allowed to appear before said committee in explanation of the same.

He further prays and confidently believes that neither the committee nor the House of Representatives would intentionally do him injury; and that, after a full investigation of all the facts in the case, he will receive the commendation of said committee and said House of Representatives, as well as the approval of all loyal citizens throughout the world.

Very respectfully,

GEO B. SIMPSON,

Fifth Auditor's Office, U. S. Treasury.

WASHINGTON CITY, D. C., *February 1, 1862.*

BYINGTON vs. VANDEVER.

SUPPLEMENTAL MEMORIAL AND EVIDENCE.

FEBRUARY 11, 1862.—Referred to the Committee of Elections.

FEBRUARY 12, 1862.—Ordered to be printed.

To the honorable the House of Representatives of the thirty-seventh Congress:

The undersigned, who is claiming a seat in your honorable body as representative of the second congressional district of the State of Iowa, in virtue of the election referred to in his original memorial, which was presented on the 2d day of December last, respectfully represents that since the presentation of his said original memorial he has been advised that large numbers of legal votes were cast for him for such representative in many of the townships of said district at the aforesaid election, of which no return whatever was made by the township boards, upon the alleged pretext that said votes were void, in consequence of the neglect of the Governor of Iowa to notify said congressional election by proclamation.

That these facts have come to the knowledge of the memorialist since the commencement of your present session, which is the only reason why they were not stated in said original memorial.

That the alleged dereliction of said township boards in refusing to return said votes to the county canvassers is without any legal excuse or justification, even supposing the said township officers to be the proper judges of the legality of said election, because, as the undersigned expressly charges, there is no provision whatever in the laws of Iowa which requires the governor to notify by proclamation either a *regular* congressional election, or such an election to *fill a vacancy*, as this is shown to have been.

In regard to the *regular* elections of said State, the following is the provision for executive proclamation, viz:

“It shall be the duty of the governor, at least thirty days before any ‘general election,’ to issue his proclamation, designating all the offices to be filled by the vote of *all the electors of the State*, or by the electors of any *judicial* district, and to transmit a copy thereof to the sheriff of each county of the State.”—(*Revision of 1860, sec. 462, p. 77.*)

A congressman is neither elected by "*all the voters of the State*," or by those of any "*judicial*" district.

And in regard to elections *to fill vacancies*, the following is the provision, to wit:

"SEC. 672. Vacancies occurring in township offices, ten days; in county offices, fifteen days; and in all other public elective offices, thirty days, prior to the day of a general election, *shall be filled at such general election: Provided*, that should a vacancy occur in the office of a representative in Congress," &c., "and the body in which the vacancy exists will convene in a general or extra session prior to such election, *then* it shall be the duty of the governor to *order* a special election to fill such vacancy, to be held at the earliest practicable time; and ten days notice of such election shall be given."—(*Revision of 1860, sec. 672, p. 102.*)

The undersigned begs leave further to suggest, by way of supplement to his said original petition, that, since the commencement of your present session, the Hon. William Vandever, who has been recently occupying, under the circumstances and disabilities named in said original memorial, the seat claimed by the undersigned, has "*absented himself from the service of the House*," in violation of the thirty-third standing rule thereof: "*Absence of a member.—Rule 33.—No member shall absent himself from the service of the House unless he have leave, or be sick, or unable to attend.*"

But, as the undersigned is advised and believes, in pursuance of the commands of his superior military officer, that he is now in the field, as an army officer of the United States, with no prospect of such further leave of absence therefrom as will enable him to resume said seat during the present session; and that, unless the undersigned shall be admitted to said seat, the said district (probably the most populous of any in the United States) will remain wholly unrepresented.

LEGRAND BYINGTON.

DOCUMENTARY EVIDENCE IN RELATION TO THE FACTS AND LEGAL PROPOSITIONS PRESENTED BY THE CLAIMANT.

I. *As to Colonel Vandever's appointment.*

COMMITTEE OF ELECTIONS,
House of Representatives, Washington, January 13, 1862.

SIR: On behalf of the Committee of Elections of the House of Representatives, and at the request of the contestant in the case of *Byington vs. Vandever*, I respectfully request that you will furnish the committee with copies of the authority which your department conferred upon Hon. William Vandever, to enlist, organize, and command a regiment of volunteer infantry within the State of Iowa, and of any orders, instructions, and circulars which may have been sent by your department to the governors or military authorities of the States, in reference to the giving of commissions to officers of the

volunteer militia entering the service of the United States for the present war. Also to be informed whether your department has extended Colonel Vandever's leave of absence from his regiment; and if so, for how long a period.

I have the honor to be, very respectfully, your obedient servant,
HENRY L. DAWES, *Chairman.*

Hon. SECRETARY OF WAR.

WAR DEPARTMENT,
Washington City, February 10, 1862.

SIR: In reply to your letter of the 11th ultimo, I have the honor to enclose to you copies of the authority conferred upon Hon. W. Vandever to enlist, organize, and command a regiment of volunteer infantry within the State of Iowa, and of all orders, instructions, or circulars which have been sent from this department to the governors or military authorities of the States in reference to the giving of commissions to officers of the volunteer militia entering the service of the United States for the war.

I have also to inform you that leave of absence for ——— days was granted to Colonel Vandever from headquarters department of the Missouri, and afterwards extended by special orders from the Adjutant General's office; copies of which are herewith enclosed.

Very respectfully, your obedient servant,

EDWIN M. STANTON,
Secretary of War.

Hon. H. L. DAWES,

*Chairman of Committee of Elections,
House of Representatives.*

WAR DEPARTMENT, *July 23, 1861.*

SIR: I accept your offer to furnish a regiment of infantry from the second congressional district of Iowa "for the service of the country during the war." Please have them ready for marching orders as soon as practicable.

By order of the Secretary of War.

Respectfully, your obedient servant,

JAMES LESLIE, JR.,
Chief Clerk.

Hon. WILLIAM VANDEVER,

House of Representatives.—Present.

WAR DEPARTMENT,
Washington, August 2, 1861.

DEAR SIR: Your letter of the 27th ultimo, requesting that rifles and Minie muskets be sent to arm the regiment tendered by you, was

referred to the chief of ordnance, who reports as follows: "Arms, accoutrements, &c., for troops mustered into the United States service will be supplied on requisitions of the United States mustering officers." The particular arms requested by you cannot at present be furnished.

I am, sir, very respectfully, your obedient servant,

THOMAS A. SCOTT,
Acting Secretary of War.

Hon. WILLIAM VANDEVER, M. C.,
Washington, D. C.

This appointment of Colonel Vandever, by the War Department, to "enlist, organize, and command" a regiment of volunteers, must be deemed to have been the *act of the President of the United States*, according to the authority of *Wilcox vs. Jackson*, 13 Peters, 498, which is sufficiently shown by the following:

"WAR DEPARTMENT,
"September 30, 1824.

"SIR: I enclose herewith a copy of a letter from Doctor Wolcott, Indian agent at Chicago, and request you will direct a reservation to be made for the use of the Indian department at that post, agreeably to his suggestions.

"I have the honor to be, &c.,

"J. C. CALHOUN.

"GEORGE GRAHAM, Esq.,

"Com'r of the General Land Office, Treasury Department."

"GENERAL LAND OFFICE,
"October 1, 1824.

"SIR: In compliance with your request, I have directed that the fractional section 10, township 39 N., range 14 E., containing 57.50 acres, and within which Fort Dearborn is situated, should be reserved from sale for military purposes.

"I am, &c.,

"GEORGE GRAHAM.

"Hon. J. C. CALHOUN,

"Secretary of War."

"BY THE COURT: The President acts in many cases through the heads of departments, and the Secretary of War having directed (as above set forth) a section of land to be reserved for military purposes, the court presumed it to have been done by direction of the President, and held it to be by law his act."

II.

As to the commissioning of volunteer officers by the State authorities.

GENERAL ORDERS, } WAR DEPARTMENT,
No. 45. } *Adjutant General's Office, Washington, July 19, 1861.*

* * * * *

“Vacancies occurring among the commissioned officers in volunteer regiments will be filled by the governors of the respective States by which the regiments were furnished. Information of such appointments will, in all cases, be furnished to the adjutant general of the army.”

By order:

L. THOMAS, *Adjutant General.*

Official.

GEO. D. RUGGLES,
Assistant Adjutant General.

GENERAL ORDERS, } WAR DEPARTMENT,
No. 78. } *Adjutant General's Office,*
Washington, September 16, 1861.

I. All *persons* having received authority from the War Department to raise volunteer regiments, batteries, or companies in the loyal States are, with their commands, hereby placed under the orders of the governors of those States, to whom they will immediately report the present condition of their respective organizations. These troops will be organized, or reorganized, and prepared for service by the governors of their respective States in the manner they may judge most advantageous for the interests of the general government.

II. Volunteer officers who have complied, or may hereafter comply, with the conditions of their respective acceptances from the War Department, and who have not received commissions from the President of the United States, will be commissioned by the governors of the respective States by furnishing the regiments, batteries, or independent companies to which these officers are attached.

III. The governors of the several States may, at any time during the organization of a volunteer regiment, authorize the adjutant, quartermaster, and, when absolutely necessary, the medical officers thereof, to be mustered into service, to aid in recruiting the regiment, and for the prompt transaction of all other public business. All other officers will be mustered into the service as directed in General Orders No. 61, current series, from this office.

By order:

L. THOMAS, *Adjutant General.*

Official.

GEO. D. RUGGLES,
Assistant Adjutant General.

GENERAL ORDERS, }
No. 105. }

HEADQUARTERS OF THE ARMY,
Adjutant General's Office, Washington, December 3, 1861.

The following orders have been received from the Secretary of War :

1. No more regiments, batteries, or independent companies will be raised by the governors of States, except upon the special requisition of the War Department.

Those now forming in the various States will be completed, under direction of the respective governors thereof, unless it be deemed more advantageous to the service to assign the men already raised to regiments, batteries, or independent companies now in the field, in order to fill up their organizations to the maximum standard prescribed by law.

* * * * *

By command of Major General McClellan.

L. THOMAS,
Adjutant General.

Official.

GEORGE D. RUGGLES,
Assistant Adjutant General.

III.

As to Colonel Vandever's pay.

COMMITTEE OF ELECTIONS,
House of Representatives, Washington, January 13, 1862.

SIR: On behalf of the Committee of Elections of the House of Representatives, and at the request of the contestant in the case of Byington *vs.* Vandever, I respectfully request that you will inform me whether the name of Hon. William Vandever appears upon your pay-rolls as colonel of the 9th regiment of Iowa volunteer infantry; and if so, how much he has received, and how much is now due to him for his military services.

I have the honor to be, very respectfully, your obedient servant,

HENRY L. DAWES,
Chairman.

PAYMASTER GENERAL of the United States.

PAY AS COLONEL.

PAYMASTER GENERAL'S OFFICE,
Washington City, January 13, 1862.

SIR: Your letter of 11th instant is received. On examination of the rolls of the 9th Iowa volunteers, as far as received in this office, the name of William Vandever appears on the field and staff muster for pay-roll for October 31, 1861. *He has drawn pay as colonel of said regiment to September 30, 1861.* It is not in the power of this

department to say whether he has been paid since, as the accounts and vouchers of the paymaster at St. Louis for October and November have not all been received yet. The account of Lieutenant Colonel Andrews, who made the above payment, has been sent to the Second Auditor to be passed, and credit is claimed therein for the above payment.

Very respectfully, your obedient servant,

BENJAMIN F. LARNED,

Paymaster General United States Army.

Hon. H. L. DAWES,

Chairman of Committee of Elections,

House of Representatives, Washington.

PAY AS REPRESENTATIVE.

COMMITTEE OF ELECTIONS,

House of Representatives, Washington, February 11, 1862.

SIR: On behalf of the Committee of Elections, and at the request of the contestant in the case of Byington vs. Vandever, I respectfully request that you will furnish me, by the bearer, with a statement of the amount of pay and mileage which Hon. William Vandever has drawn, as representative, since the 23d day of July, 1861.

Respectfully, your obedient servant,

H. L. DAWES, *Chairman.*

Mr. SERGEANT-AT-ARMS of the House.

OFFICE SERGEANT-AT-ARMS,

House of Representatives, Washington, February 11, 1862.

DEAR SIR: In answer to your note of this morning, I have to state that the Hon. Wm. Vandever has received, including certificate for second mileage, which was issued to him in pursuance of the decision of the Speaker, \$4,874 60, as compensation and mileage, during the present Congress.

Respectfully,

EDWARD BALL,

Sergeant-at-arms, House of Representatives.

Hon. H. L. DAWES.

IV.

As to Colonel Vandever's leave of absence from his regiment, past and prospective.

SPECIAL ORDERS, }
No. 326. }

HEADQUARTERS OF THE ARMY,

Adjutant General's Office, Washington December 11, 1861.

* * * * *

3. The leave of absence granted Colonel William Vandever, 9th regiment of Iowa volunteers, in Special Orders No. 1, November 21,

1861, from the headquarters department of the Missouri, is extended thirty days.

* * * * *

By command of Major General McClellan.

L. THOMAS,
Adjutant General.

Official.

GEORGE D. RUGGLES,
Assistant Adjutant General.

ADJUTANT GENERAL'S OFFICE, *January 30, 1862.*

SPECIAL ORDERS, }
No. 9. }

HEADQUARTERS OF THE ARMY,
Adjutant General's Office, Washington, January 11, 1862.

* * * * *

5. The leave of absence granted Colonel William Vandever, 9th regiment Iowa volunteers, by Special Orders No. 1, of 1861, from the headquarters department of the Missouri, and No. 326, of 1861, from the Adjutant General's office, is further extended thirty days.

* * * * *

By command of Major General McClellan.

L. THOMAS,
Adjutant General.

Official.

GEORGE D. RUGGLES,
Assistant Adjutant General.

ADJUTANT GENERAL'S OFFICE, *January 30, 1862.*

HOUSE OF REPRESENTATIVES, *January 27, 1862.*

SIR: I have to inform you that at your request I called, through one of the messengers of the House, upon the operator of the Capitol telegraph office, on the 25th instant, for a copy of the supposed order from the military department of the west to Colonel Wm. Vandever to join his regiment, now in active service in Missouri, and was advised through said messenger that such copy could not be furnished.

I am, very respectfully, your obedient servant,

LEGRAND BYINGTON, Esq.
Washington, D. C.

WASHINGTON, *January 27, 1862.*

SIR: Will you do me the favor, on behalf of your committee, to call upon the adjutant general, or other proper officer, for a copy of

the order, if any, by which Colonel Wm. Vandever, of the House of Representatives, has been recently ordered to join his regiment, now stationed in the State of Missouri?

Very respectfully, your obedient servant,

LEGRAND BYINGTON.

Hon HENRY L. DAWES,

Chairman Committee of Elections.

P. S.—As this order is alleged to have been transmitted by telegraph, perhaps the call should be directed to that office.

WASHINGTON, D. C., *January 30, 1862.*

SIR: I am prosecuting before the United States House of Representatives, at this place, a contest for the seat now held, from the second Iowa district, by Colonel Wm. Vandever, commanding the 9th Iowa regiment in your department; and learning some days since that Colonel V. had left his seat in the House to join his regiment, in pursuance of a telegram from your department, I caused an application to be made by a member, who is my friend, to the telegraph office, for a copy of the order, which has been refused.

I desire, therefore, that, if not incompatible with your duties to the public, you will cause a copy of said order to be sent to me by mail, and also to be informed whether Colonel Vandever will be granted further leave of absence from his regiment for the mere purpose of occupying a seat in the House; and I frankly state to you that I desire this information for use before the Committee on Elections of the House. An answer is desired at your earliest convenience.

Very sincerely, your obedient servant,

LEGRAND BYINGTON.

Major General HALLECK,

United States Army, Missouri.

HEADQUARTERS DEPARTMENT OF THE MISSOURI,

St. Louis, February 4, 1862.

SIR: Your letter of January 30 is just received. I sent no telegraphic or other orders to Colonel Vandever to join his command. His regiment is now in the field, and *he will receive no leave of absence from me* for the present, unless for the most cogent reasons, or by direction of my superiors at Washington.

Very respectfully, your obedient servant

H. W. HALLECK,

Major General.

Hon LEGRAND BYINGTON,

Washington, D. C.

WASHINGTON, *February 4, 1862.*

SIR: On the 13th of January ultimo you, at my instance, and on behalf of your committee, requested the Secretary of War, by letter, to inform you whether he had "extended Colonel Wm. Vandever's leave of absence from his regiment?" &c.

No response having been received, I myself, on the 23d of January, addressed to the Secretary of War the following note, to wit:

"Hon. EDWIN M. STANTON, *Secretary of War.* Sir: On October last the people of the second congressional district of Iowa, in pursuance of the laws of that State, elected me a representative of said district to the thirty-seventh Congress, upon the supposition that the seat was *vacant* by reason of Hon. Wm. Vandever's entry into the active military service of the United States, as colonel of the 9th regiment of Iowa infantry, and I have been several weeks in Washington endeavoring to obtain said seat.

"On the eve of the commencement of the present session, Colonel Vandever (as I am advised by letter from his immediate commander, General S. R. Curtis) obtained leave of absence from his regiment, stationed in Missouri, for *thirty days*, 'to be continued in the discretion of the Secretary of War.'

"Having seen Colonel Vandever occupying this contested seat for weeks after this 'thirty days' leave of absence' had expired, I am anxious, on behalf of my constituency, to know whether, under your administration of the War Department, Colonel Vandever will or will not be ordered to join his regiment, in plain discharge of the military duties which he has assumed. Your early answer is respectfully requested, (if not incompatible, &c.,) as one means of enabling me to prosecute this contest with a correct understanding of Colonel Vandever's real position."

Having at this date received no answer to the foregoing, I called personally upon the Secretary, and was by him verbally advised that by his direction the general-in-chief had already ordered regimental commanders (including Colonel Vandever) to report at their respective headquarters for duty; and that hereafter no further leave of absence would be granted them unless for better reasons than a supposed obligation to serve as a representative in Congress.

I submit, therefore, that, in view of Colonel Vandever's compulsory absence, and of the extent of my district, (probably the most populous of any in the United States,) there should be no further delay in this matter than the *convenience of the committee* may require.

Very respectfully, your obedient servant,

LEGRAND BYINGTON.

Hon. HENRY L. DAWES,

Chairman of Committee of Elections,

House of Representatives.

V.

As to the candidacy of the claimant.

WASHINGTON, *January 24, 1862.*

MY DEAR SIR : If I remember correctly, the Democratic State Central Committee in September last issued a printed circular to the several counties in the second congressional district, requesting that my name should be placed upon the State ticket as a candidate for representative to Congress at the October election. Will you be so kind as to send to me, at this city, a copy of said circular?

I am, very respectfully, your obedient servant,

LEGRAND BYINGTON.

GEO. M. TODD, Esq.,

Ch'n Dem. State Central Committee, Des Moines, Iowa.

[No answer to the foregoing has been received, although a reply is alleged to have been sent.]

WASHINGTON, *January 25, 1862.*

MY DEAR SIR : Will you be kind enough to call upon G. M. Todd, esq., chairman of the Democratic State Central Committee, and procure from him, and send to me, a copy of the circular of last September, in which the said committee directed my name to be placed upon the State ticket for representative in Congress for the second Iowa district?

Very truly, your friend,

LEGRAND BYINGTON.

P. M. CASADY, Esq.,

Des Moines, Iowa.

DES MOINES, IOWA, *February 1, 1862.*

DEAR SIR : I have received yours of the 25th ultimo, and, in reply, I have to say that I have just had an interview with G. M. Todd. He says he has written you, stating that the circular you desire cannot be found here, &c. I urged him to make diligent search for it, but failed to get one for you. He also says he stated to you that the circular was issued, and *that your name was placed regularly on the ticket.*

I hope you will succeed, and be permitted to take your seat. You have my thanks for copies of your arguments in the contested case and Babbitt case in the Supreme Court. We desire a copy of the bankrupt law as soon as it is enacted.

Yours, truly,

P. M. CASADY.

HON. LEGRAND BYINGTON,

Washington City.

DISTRICT OF COLUMBIA, ss:

I, James D. Jenkins, a citizen of the State of Iowa, and inhabitant of the second congressional district of said State, upon my oath, depose and say, that Legrand Byington, esq., was publicly announced as a candidate for Congress in place of Hon. William Vandever, by newspaper publication throughout the limits of said second district, for several weeks previous to the "general election" of said State for the year 1861; and that before said election this affiant saw and read a printed circular, issued by the Democratic State Central Committee of said State, by the terms of which Mr. Byington was, in the absence of any nominating convention, named as a candidate for Congress within said district, and the several county committees were requested to place his name as such candidate upon the State ticket throughout the limits of said district.

JAMES D. JENKINS.

Subscribed and sworn to before me this 10th day of February, 1862. Witness my hand and notarial seal, hereto affixed, the date aforesaid.

[L. S.]

EDM. F. BROWN, *Notary Public.*

VI.

As to the refusal of the county canvassers to return votes cast.

The Committee of Elections not having answered the interrogatory which I propounded to them in my letter of December 27, 1861, (Mis. Doc. 28, pp. 1, 2,) as to the necessity of the establishment of votes outside of those returned to the office of the State canvassers, I have here ascertained such additional votes from the county authorities *to the extent only* of proving that votes were so withheld. *How many* votes have been so withheld by the county boards can only be ascertained by a troublesome and expensive process, which will not be further pursued, unless their ascertainment shall be deemed indispensable. The following are examples, as will be seen by a comparison of them, with the table certified by the secretary of state.—(Mis. Doc. 16, p. 2.)

THE STATE OF IOWA, *Jones County*, ss:

This is to certify that at the "general election" of the State of Iowa, held in Jones county on the 8th day of October, A. D. 1861, Legrand Byington received *two hundred and sixty-two votes* for member of Congress for the second congressional district.

In testimony whereof, I have hereunto set my hand and affixed the seal of the district court of Jones county this 3d day of [SEAL.] January, A. D. 1862.

G. P. DIETZ, *Clerk.*

Fees 50 cents; paid by N. G. Sales.

STATE OF IOWA, *Scott County*, ss:

I, Ira M. Gifford, clerk of the district court in and for said county, do hereby certify that upon examination of the poll-books from the several townships in said county, giving the returns for the "general election" for the year 1861, the following, among other returns, appears upon the poll-book from the township of Le Claire, viz:

"Legrand Byington had *one hundred and thirty-three* (133) votes for member of Congress;" and that the other townships of said county make no return of votes cast for member of Congress.

Witness my hand and seal of office, hereto affixed, in the city of
[SEAL.] Davenport, in said county, this the 17th day of January,
A. D. 1862.

IRA. M. GIFFORD,
Clerk District Court, Scott County, Iowa.

VII.

As to votes withheld, and not returned by the township election officers, as alleged in the supplemental memorial.

The same remark which has been hereinbefore made in reference to votes not canvassed by the *county boards* is entirely applicable to those which were withheld by the *township* election officers. A sample merely has been obtained, which will sufficiently appear by a comparison of the following with the certificate (above) of the clerk of Scott county. Wherever I happened to have a *personal friend* among those returning officers, and there only, the vote seems to have been properly canvassed.

WASHINGTON, *January 22, 1862.*

MY DEAR SIR: By a certified abstract, this day received from Mr. Gifford, the clerk of your district court, through Judge Grant, I find that no votes were returned for me, for Congress, in October last, by any township board of your county, except from Le Claire. It being within my personal knowledge that large numbers of votes were given for me at Princeton, Pleasant Valley, Blue Grass, and perhaps other townships in your county, I request that you will do me the favor to obtain from the township election officers of Princeton, which is nearest you, a certified abstract of the vote of said township for Congress, and to send the same, together with charges, to me at this place immediately.

Very truly, your friend,

LEGRAND BYINGTON.

HON. LAUREL SUMMERS, *Le Claire, Iowa.*

WASHINGTON, *February 4, 1862.*

To the township clerk of Pleasant Valley township, Scott county, Iowa :

MY DEAR SIR : I am prosecuting a contest for a seat in the House of Representatives, and find from a certificate of the clerk of the Scott county court, recently received, that the vote cast for me in your township at the October election *was not returned* to the county canvassers.

I want the use of those votes, and have to request that you will send me a certified statement of the number of votes cast for me in Pleasant Valley township, together with your charges. Will you do me the favor to send the statement immediately?

Very respectfully, yours,

LEGRAND BYINGTON.

[No answer yet received.]

LE CLAIRE, IOWA, *February 5, 1862.*

DEAR SIR : I have been quite ill since the receipt of your letter in relation to votes being polled for you at the October election at Princeton. As soon as I get able to travel I will go there and see about it, if it will in any way assist you. The extraordinary course of the "Democrat and News," at Davenport, after Judge Mason declined, threw everything connected with the election in this county into confusion, or a large vote would have been given for you in all the townships. Here we had a meeting on Saturday evening before the election, and ordered tickets printed to suit ourselves, and saw to it that the judges of election made a return of your vote. A few of our tickets, I understand, got to Princeton, and were voted there ; but generally the ballots went in without any name for Congress. J. A. Burchard, in Pleasant Valley township, got tickets printed for that township with the names of Samuels and Williams on, but regretted that he knew nothing about your running for Congress. Still you got some votes there. Please write again on this subject.

Truly, yours, &c.,

LAUREL SUMMERS.

Hon. L. BYINGTON.

VIII.

As to giving effect to this election.

In the case of Joseph Segar, at the present session, the Committee of Elections (Report No. 12) say that they do not desire, upon a question of this character, to "rest their conclusions upon so narrow a basis as a *strict* conformity with *all* the provisions of law ;" and, further, that "if the Union voters of the district had had an opportunity to choose a representative—if there had been no armed occu-

pation of the district by rebels, so that polls could have been opened at the various voting places, and all who desired could have deposited their ballots, and had done so, in conformity with the provisions of the law, so far as the disturbed and abnormal condition of things would permit—the committee would have sought some way to give effect to such election," &c.

This is sound doctrine, and accords precisely in spirit with the conclusions of the elections committee in the case of a delegate from Michigan, at the first session of the 19th Congress, (Report No. 69,) wherein they say:

"In all cases of contested elections, where the question depends upon matters of fact, which are controverted by the parties, much difficulty is to be expected in coming to a decision; and where there is room for doubts, a disposition is often felt to return it to the people. *This, however, ought not to be done, where it is possible to ascertain what the true result has been. The elective privilege is a very important one, and ought to be held in the highest estimation. When a people, in the exercise of their constitutional rights, have gone through with the process of an election, according to the prescribed rules, they ought not to be deprived of the advantages accruing therefrom, but for the most substantial reasons.*"

A substantial compliance with the law of elections, then, where opportunity to elect has existed, secures, even in doubtful cases, the right of representation. *The case in hand is clearly within these conditions.* The Union voters of the second Iowa district "have had an opportunity to choose a representative," in place of one who had disqualified himself, in law and fact, to serve them; "polls have been opened at the various voting places;" and "all who desired have deposited their ballots, in conformity with the provisions of the law, so far as the condition of things would permit."

This election, then, is complete; and it only remains for the committee, in pursuance of the enlightened principles which they have themselves announced, so to report as "to give effect to such election."

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PRINTING OF THE AGRICULTURAL PATENT OFFICE RE-
PORT IN THE GERMAN LANGUAGE.

MEMORIAL

OF

GERMAN-AMERICAN AGRICULTURISTS AND CITIZENS

FOR THE

Printing of the Agricultural Patent Office Report in the German language.

FEBRUARY 14, 1862.—Laid on the table and ordered to be printed.

MEMORIAL of German-American agriculturists and citizens, for the printing and distribution of an adequate number of copies of the annual agricultural report of the Commissioner of Patents, in the German language.

To the honorable the members of the Senate and House of Representatives in Congress assembled:

In pursuance of the act of Congress "For the collection of agricultural statistics, investigations for promoting agriculture and rural economy and the procurement of cuttings and seeds," a certain number of the agricultural report of the Commissioner of Patents is ordered to be annually printed and distributed to the agriculturists of the country. This valuable and instructive publication, being printed exclusively in the English language, remains, on the whole, a dead letter to that large class of adopted citizens speaking the German language, who, from the combination of a great many causes, rendering the acquisition of the English language either impossible, or, at least, too difficult of attainment to them, are, therefore, deprived of the opportunity of making themselves familiar with the contents of the report, with its teachings and new modes of appliances and cultivation—certainly as necessary to them as to their native-born fellow citizens. The disadvantage accruing to them, from not being able to understand the report, may, therefore, be considered, at least, as great as the advantage derived by those naturally familiar with the English language.

Among the various causes referred to as combining to render the acquisition of the English language by the German farmer either impossible or too difficult, we beg leave to point out the following as the most prominent:

1. The *largest* portion of the immigrant farming population arrived in this country at an average age of thirty years, when, from the nature of the training received in their native country, the human mind is not so constituted as to make the study of a new language an object paramount to that of making their livelihood.

2. Their whole attention, time, and labor is naturally and necessarily directed to the improvement of their material condition.

3. The obstacles presenting themselves to the study of the English language, as regards reading and writing it, embarrassing even to the educated immigrant, are altogether insurmountable to THAT CLASS of the German farming population, contenting itself, generally, with a knowledge of the language sufficient to carry on the necessary conversational intercourse.

4. In many instances the immigrants live on isolated farms, in sparse settlements, without any further intercourse than is absolutely required in their rural pursuits.

5. There is an annual influx of new immigration, associating with former settlers under the same mental aspects and conditions, thus retarding any progress that might otherwise have been made in the acquisition of the English language.

Though the wisdom of the act above referred to, passed by Congress for the first time in 1839, in accordance with the true principles of national economy for the promotion of the interests of the ENTIRE agricultural community, has shown itself generally in the increase and variety of production through the distribution of seeds and in a wide diffusion of agricultural information through the report of the Patent Office, the German farming population has had but little power to share in the government patronage, exceeding \$400,000 since 1839, inasmuch as there were hardly any seeds or reports distributed to it prior to 1857, and inasmuch as its people could hardly derive any benefit from the distribution of a report printed exclusively in the English language.

Your memorialists furthermore respectfully submit that the German agricultural immigration, a large portion of which selects this country from a mere predilection for its free institutions, annually adds millions of dollars to the wealth of the country, in capital, labor, and consumption. Its people clear the forests, found colonies, till the soil, drain the swamps, lay out flourishing gardens, cultivate the fruit tree, and raise the grape vine, thus enhancing the value of the land and beautifying the country. Among the many instances of this character we respectfully refer to the border settlements, especially those of Texas and Missouri, to the garden of the west, and to the market gardens and vineyards adorning the vicinities of the cities. And all this is accomplished through their own perseverance, industry, and energy, unaided by any government patronage available to the German immigration, and under the struggles and hardships attending the foundation of new homes in a new and strange country, unknown to them in climate, in manners, in customs, and, above all, new in language.

How much they would, therefore, be assisted in their agricultural efforts by a German edition of the report may easily be inferred.

While the agricultural immigration from England, Scotland, and Ireland, already speaking the English language, are enabled to profit by the agricultural report as soon as they reach the shores of this country, the German agricultural immigration, owing to the want of a knowledge of the English language, will hardly ever, during a lifetime, be able to derive any advantage from a work intended for the diffusion of agricultural information, and for the promotion of the interests of the ENTIRE agricultural community.

A German edition would be the means of encouraging its readers in eliciting information and of inducing to furnish useful contributions of their own experience for publication in the report; it would have a tendency to appropriate and adapt to the use of this country the substance of the rich treasures of the extensive agricultural literature already built up in Germany. It would also bring about a more intimate intercourse and a more beneficial exchange of opinion with their native born fellow-citizens, inasmuch as a German edition would prove a great inducement for acquiring a knowledge of the English language, by comparing both editions, serving mutually as grammar and dictionary. This method, it is thought, would contribute not a little to the so much desired and necessary acquisition of a more correct knowledge of the English language, infinitely more desirable and superior to the corrupt style of language, now spoken in several parts of the country, being neither English nor German.

The knowledge of more than one language in an educational, social, commercial, and literary point of view, has always been considered by all civilized nations as a valuable treasure and useful acquisition, both for the benefit of individuals and society itself, facilitating intercourse and business transactions generally, and promoting a more rapid and effectual diffusion of knowledge and science. This would seem to have special application to the mutual cultivation of the English and German languages, in view of the great proportion of the German population and their intercourse with the native-born fellow-citizens, in view of the annual influx of immigration, and in view of the relations existing between them and their native country.

We further beg leave to submit that there is no well founded fear of a German edition retarding the beneficial and national process of amalgamation among our people. We take pride in declaring before the world that we all have sworn allegiance to the government of the United States. We all consider ourselves Americans in heart, and mean to remain so. We all are anxious to unite and contribute our exertions to the welfare, power, dignity, liberty, and honor of the ONE American nation. Our ancestors and their sons were seen in rank and file side by side with their American fellow-citizens in the revolution of 1776, in the war of 1812, in the Indian wars, and in the Mexican war. In the suppression of the unholy rebellion of the present day we all stand firmly by the government, and true to the principles of liberty and equal rights for all, equipping regiments, furnishing about 100,000 men, and founding relief associations for the maintenance of the integrity of the Union—our pride, our safeguard, and our asylum. On the contrary, we venture to say that a just regard

to the object of our petition would fill our hearts with gratitude and confirm our attachment to a generous government.

If it should be asked, why not also publish a French, Spanish, Italian, or any other edition of the report, the answer might be implied in the comparative smallness of any, or all, other of these foreign nationalities combined engaged in agricultural pursuits, when compared with the number, importance, and achievements of the German farming population, forming, next to their American fellow-citizens, the greatest number engaged in rural pursuits.

A German edition might furthermore be considered an appropriate medium for the exchange of books with the agricultural societies and institutions of Germany, securing a more effectual diffusion of the knowledge of the agricultural operations in the United States, and effecting a better interchange of opinion.

The edition asked for is not without precedent under governments composed of different nationalities, as is seen in Russia, where one single agricultural work has been ordered to be published in six different languages for the benefit of those unacquainted with the language of the government. There are even some State governments in this country publishing some of their most important transactions in both languages.

On the supposition of 260,000 copies of the Agricultural Report being ordered by Congress to be printed—consisting of 230,000 English and 30,000 German copies, the expenses for preparing the articles, for binding and distributing the entire edition would be the same—the expenses of the German edition being altogether confined to the composition and translation, which latter part of the labor could be made part of the duties of the German translators now employed in the agricultural division of the Patent Office, without causing any additional expenses.

The small amount thus required for carrying out the object of your petitioners would hardly bear comparison with the mutual beneficial results to be realized in the diffusion of information on agriculture and its improvement, in the furtherance of its literature, in the friendly intercourse and co-operation of the German farming population with their native-born fellow-citizens in improving the agricultural division, and in the increased devotion and gratitude to a just and generous government. And your memorialists will ever pray.

JOSEPH KILIAN, *Maryland.*

CHAS. ROESER, *Wisconsin.*

FR. RIEDLING, *Ohio.*

JOHN SAUERWEIN, *Connecticut.*

JOHN L. PFAU, *Kentucky.*

JOHN G. BUXMAN, *Tennessee.*

J. FRED. MEYERS, *Michigan.*

JOHN BITTMANN, *Iowa.*

JULIUS GEORGUS, *Minnesota.*

CHARLES FORSTER, *Indiana.*

ARTHUR WITZLEBEN, *Dis. Col.*

THEODOR POESCHE, *Pennsylvania.*

M. C. GRITZNER.

BYINGTON vs. VANDEVER.

FEBRUARY 17, 1862.—Referred to the Committee of Elections, and ordered to be printed.

DES MOINES, *February 2, 1862.*

DEAR SIR: Your letter was received yesterday, and I have endeavored to obtain one of the circulars issued last fall by the State committee, and to which you refer, but have not been able to do so. They were not published in the papers, but sent under sealed envelopes to the different counties of northern district; but, as chairman of the committee, I will state that a circular was issued recommending to the democracy and conservative men of the northern district to support you for representative in Congress, and all the tickets that were printed at our office for the counties of Boone, Story, Grundy, and others, contained your name. I notice that no returns appear from these counties to the State canvassing board to that effect. I have inquired of gentlemen from these counties, and they say that the tickets voted in those counties contained your name, as printed, which was not returned. I trust you will be successful in obtaining the seat to which you are so undoubtedly entitled, and, from the law and evidence, I hardly see how you can fail to do it.

With sentiments of esteem, I remain, your obedient servant.

G. M. TODD.

Hon. LEGRAND BYINGTON.

General Orders, }
No. 66. }

WAR DEPARTMENT,
Adjutant General's Office,
Washington, August 26, 1861.

I. The commissioned officers of all volunteer organizations, no matter whether established under the authority of a State or of the *United States*, will be regarded as having been commissioned on the day when mustered into the service of the United States, and will take rank in their respective grades, will be entitled to pay, and be obeyed and respected in their several positions from that date.

II. Hereafter no minors will be mustered into the service of the United States as volunteers without the consent of their parents or guardians.

III. Captain Gurden Chapin, 7th infantry, having given proof of disloyalty, is dismissed the service of the United States, to take effect from the date of this order.

By order:

L. THOMAS,
Adjutant General.

Official:

GEO. D. RUGGLES, *Assistant Adjutant General.*

SUTLERS IN THE ARMY.

JOINT RESOLUTIONS

OF

THE OHIO LEGISLATURE,

RELATIVE TO

The protection of our soldiers from the imposition of sutlers in the army.

FEBRUARY 21, 1862.—Laid on the table, and ordered to be printed.

RESOLUTION relative to the protection of our soldiers from the imposition of sutlers in the army.

Whereas the privileges allowed by the general government to sutlers have been greatly abused, and as the result thereof soldiers have been cheated and defrauded of their money, and have paid large sums to sutlers without any adequate consideration therefor: Therefore be it—

Resolved by the general assembly of the State of Ohio, That our senators in Congress be, and they are hereby, instructed, and our representatives requested, to use their best endeavors to procure the passage of a law abolishing the office of sutlers in the army, and providing that all necessaries be furnished our soldiers through the commissaries of the army.

Be it further resolved, That the governor of Ohio be, and is hereby, requested to forward copies of these resolutions to our senators and representatives in Congress.

JAMES R. HUBBELL,

Speaker of the House of Representatives.

B. STANTON,

President of the Senate.

Passed February 7, 1862.

REPORT
OF THE

JOINT RESOLUTIONS

T H O M A S & L E S T E R

The Committee on the Judiciary of the House of Representatives

Report on the

Joint Resolution of the House of Representatives

Passed by the House of Representatives on the 14th day of March, 1874.

Approved by the Senate on the 14th day of March, 1874.

Approved by the President on the 14th day of March, 1874.

JAMES M. FURBELL
Speaker of the House of Representatives
B. STANTON
President of the Senate

Printed by the Government Printer

FRAUD AND CORRUPTION BY AGENTS AND OFFICERS OF
THE GOVERNMENT.

RESOLUTIONS
OF
THE LEGISLATURE OF OHIO,
IN RELATION TO

Fraud and corruption by agents and officers of the government.

FEBRUARY 21, 1862.—Laid on the table, and ordered to be printed.

RESOLUTION relative to requesting Congress to pass such laws as will prevent fraud and corruption by the agents and officers of the government

Whereas we regard with surprise, anxious alarm, pain, and regret the evidences that have reached us, and the disclosures that have been made in Congress of wastefulness, fraud, and speculation based upon deep corruption among the subordinate agents of our national government in connexion with supplies for the army of the United States; and whereas these frauds largely increase the public expenditure, the burden of a loyal people, bring scandal upon our free institutions, and poison the people's confidence in their government—in short, strike a death blow at the cause of freedom; and whereas, especially at this time, an abiding faith and firm confidence in the integrity of our public officers is indispensable for the public good, the successful overthrow of the rebellion, and the nation's credit at home and abroad: Therefore—

Be it resolved by the general assembly of the State of Ohio, That Congress be, and hereby is, respectfully asked to provide suitable and effective laws, with proper penalties attached, for all manner of fraud practiced by any person in any contract with the national government, and especially in those made in conformity with appropriations for the supply and pay of our army and navy, exposing the names of all that are found guilty of such violations.

Resolved, That the governor be requested to forward copies of the foregoing preamble and resolution to our senators and members in Congress.

JAMES R. HUBBELL,
Speaker of the House of Representatives.
B. STANTON,
President of the Senate.

Passed February 11, 1862.

FRAND AND CORRUPTION BY AGENTS AND OFFICERS OF
THE GOVERNMENT.

RESOLUTIONS

THE LEGISLATURE OF OHIO.

IN RELATION TO

FRAND AND CORRUPTION BY AGENTS AND OFFICERS OF THE GOVERNMENT.

Resolved, That, in the year 1852, and ordered to be printed.

RESOLUTIONS relating to the House of Representatives to pass laws in all respects honest and
unimpeachable by the agents and officers of the Government.

Whereas we regard with surprise, anxious alarm, and regret
the evidence that has reached us, and the disclosure that have
been made in Congress of wastefulness, fraud, and peculation
based upon deep corruption among the subordinate agents of our
national Government in connection with supplies for the army and the
United States; and whereas these facts largely increase the pub-
lic expectation, the desire of a loyal people, to see a reform upon
our civil institutions, and to see the people's confidence in their
Government—in short, while a death blow at the cause of freedom;
and whereas, especially at this time, an abiding faith and firm con-
fidence in the integrity of our public officers is indispensable for
the public good, the successful overthrow of the rebellion, and the
nation's credit at home and abroad: Therefore—

As it is urged by the general assembly of the State of Ohio, That Gov-
ernment, and honesty is, respectfully asked to provide suitable and
effective laws, with proper penalties attached, for all manner of fraud
committed by any person in any contract with the national govern-
ment, and especially in those made in conformity with appropriations
for the supply and pay of our army and navy, exposing the names of
all that are found guilty of such violations.

Resolved, That the Governor be requested to forward copies of the
 foregoing preamble and resolution to our senators and members in
Congress.

JAMES R. HUBBARD,
Speaker of the House of Representatives.
B. STANTON,
President of the Senate.

Printed February 11, 1852.

NAVAL DEPOT ON WESTERN LAKES.

RESOLUTIONS

OF

THE LEGISLATURE OF OHIO,

IN RELATION TO

The establishment of a naval depot on the western lakes.

FEBRUARY 21, 1862.—Laid on the table, and ordered to be printed.

JOINT RESOLUTION relative to establishing a naval depot on the western lakes.

Whereas it is understood that Lieutenant Totten, of the United States engineer department, has advised the United States government to establish a naval depot at some point on the western lakes; and whereas the security of the commerce of the lakes, as well as the safety of the State of Ohio and other States of the northwest, would be promoted by the establishment of such a depot at some point in Ohio, on the southerly or southwesterly shore of Lake Erie, or some of the bays or inland waters connected therewith, where shipping and supplies could be best protected from danger or injury by an armed enemy: Therefore—

Resolved by the general assembly of the State of Ohio, That our senators and representatives in Congress be requested to use their influence to procure the establishment of such depot at some of the points indicated in the foregoing preamble, at as early a day as practicable.

Resolved, That the governor be requested to forward to our senators and representatives in Congress copies of the above preamble and resolution.

JAMES R. HUBBELL,

Speaker of the House of Representatives.

JAMES MONROE,

President pro tem. of the Senate.

Passed January 31, 1862.

BRANCH CLOTHING BUREAU.

RESOLUTIONS

OF

THE LEGISLATURE OF OHIO,

IN RELATION TO

The establishment of a branch clothing bureau, &c.

FEBRUARY 21, 1862.—Laid on the table, and ordered to be printed.

RESOLUTION relative to the establishment of a branch clothing bureau, &c.

Whereas the State of Ohio is ever ready to contribute her just proportion of men and money toward the support of the federal government against the present rebellion; and whereas the burdens of this rebellion fall as heavily upon the western States as upon the eastern; and whereas the incidental advantages resulting from the expenditures of the government should be distributed upon the same principle; and whereas it is understood that an effort is now making to take from the western cities large contracts for the manufacture of clothing and other articles, and to transfer them to the cities of New York, Philadelphia, and Boston; and whereas those contracts have been fulfilled in the cities of the west as well, promptly, and cheaply as in the cities of the east: Therefore—

Resolved by the general assembly of the State of Ohio, That this body, representing the people of Ohio, does most earnestly protest against such unfair distribution of public patronage, and insists that injustice shall not be done the cities of Ohio in the removal of work performed for the army of the United States.

Resolved, That the governor of the State of Ohio be requested to send copies of these resolutions to the proper civil and military authorities at Washington.

JAMES R. HUBBELL,
Speaker of the House of Representatives.
B. STANTON,
President of the Senate.

Passed February 13, 1862.

BALTIMORE AND OHIO RAILROAD.

RESOLUTIONS

OF

THE LEGISLATURE OF OHIO,

IN RELATION TO

Opening the Baltimore and Ohio railroad.

FEBRUARY 21, 1862.—Laid on the table, and ordered to be printed.

RESOLUTION relative to the opening of the Baltimore and Ohio railroad.

Whereas the main trunks of railroads now in operation between the west and the east are so blockaded by the immense amount of freights, that shipments cannot be made from the several large shipping points for want of sufficient transportation, because of the closing of the Baltimore and Ohio railroad, to the serious detriment of the commercial interests of the State of Ohio; and whereas the west is deprived of a southern market because of the rebellion in the southern States, and is now shipping its wealth of products eastward instead of southward, thereby increasing the necessity of greater means of transportation of the products of the Mississippi valley to the new markets: Therefore—

Be it resolved by the general assembly of the State of Ohio, That our senators be instructed and our representatives be requested to urge upon the federal government the importance of giving to the Baltimore and Ohio railroad, at the earliest day practicable, such military protection as will insure the opening of the same.

Resolved, That the governor of Ohio be, and is hereby, requested to transmit copies of this resolution to each of our senators and representatives in Congress.

JAMES R. HUBBELL,
Speaker of the House of Representatives.
B. STANTON,

President of the Senate.

Passed February 14, 1862.

BALTIMORE AND OHIO RAILROAD.

RESOLUTIONS

OF

THE LEGISLATURE OF OHIO.

IN SESSION AT

COLUMBUS, OHIO, JANUARY 14, 1862.

RESOLUTIONS RELATIVE TO THE OPENING OF THE BALTIMORE AND OHIO RAILROAD.

RESOLUTION RELATIVE TO THE OPENING OF THE BALTIMORE AND OHIO RAILROAD.
Whereas the main trunk of railroads now in operation between the west and the east are so blocked by the immense amount of freight, that shipments cannot be made from the several large shipping points for want of sufficient transportation between the closing of the Baltimore and Ohio railroad, to the serious detriment of the commercial interests of the State of Ohio; and whereas the west is deprived of a southern market because of the rebellion in the southern States, and is now shipping its wealth of products eastward instead of southward, thereby increasing the necessity of greater means of transportation of the products of the Mississippi valley to the new markets: Therefore—

Be it resolved by the Senate and House of Representatives of the State of Ohio, That our Senators be instructed and our Representatives be requested to urge upon the Federal Government the importance of giving to the Baltimore and Ohio railroad, at the earliest day practicable, such military protection as will insure the opening of the same.

Resolved, That the Governor of Ohio be, and is hereby, requested to transmit copies of this resolution to each of our Senators and Representatives in Congress.

JAMES H. HUBBELL,

Speaker of the House of Representatives.

H. STANTON,

President of the Senate.

Passed February 14, 1862.

BYINGTON vs. VANDEVER.

BRIEF
OF
WILLIAM VANDEVER,
IN
The contested election of Byington vs. Vandever.

FEBRUARY 25, 1862.—Referred to the Committee of Elections, and ordered to be printed.

In the matter of the contest by Le Grand Byington of the right of William Vandever to a seat in the House of Representatives of the United States, pending before the Committee of Elections, the undersigned presents for the consideration of the committee the following, in answer to the memorial of the contestant:

1. The contestant in support of his first point represents, that by the code of Iowa, enacted in 1851, it was provided that the general election within said State was that at which the members of the general assembly are regularly chosen; that, among other specified officers, representatives to Congress were to be chosen at such general election in 1852, and on alternate years thereafter.

In answer to this the undersigned would submit that the conclusion to be drawn from the contestant's position is, that members of Congress are to be elected in Iowa at the general election; that the general election is that at which members of the general assembly are chosen.

The act of March 23, 1858, as printed in the revision of 1860 of the laws of Iowa, pages 77 to 79, inclusive, provides, in sections 470 and 471, that representatives and senators shall be chosen at the general election, 1859, and every second and fourth year thereafter.

In 1857 Iowa adopted a new constitution, and in section 7, of act 12, said constitution provides that the first election thereunder for members of Congress, &c., shall be held on the second Tuesday of October, 1858, (revision of 1860, pages 1004-'5;) clearly showing that it was not the intention of the framers of the constitution to change the time for the election of members of Congress, but to continue the same on the even years, as under the "old constitution,"

while section 6, of act 12, of the "new constitution" expressly changes the election of members of the general assembly from the "even" to the "odd" years, (revision of 1860, page 1004.) Thus showing that the contestant's conclusion as to the general election being that at which members of the general assembly are chosen, and consequently the only one at which members of Congress are to be elected, is clearly erroneous; and it may be here stated that the act of March 23, 1858, referred to by contestant, merely follows the above provisions of the "new constitution" in relation to the election of members of the general assembly, and, being silent as to members of Congress, their election continues on the "even years," as indicated by the constitution and as fixed by the code of 1851.

It may be further said that section 1 of the act of March 23, 1858, being section 459 of the revision of 1860, expressly provides that a "general election" shall be held in each and every year, and that there is no such repealing clause in said act as cited by contestant; so that in code of 1851, fixing the time for the election of members of Congress, being in harmony with the provision of the new constitution, is yet in force.

2. As to the second point raised by the contestant, presenting the question of the right of the undersigned to hold his seat in Congress, and at the same time hold a military position or office, the following is submitted as an answer thereto:

The Constitution of the United States, in section 6, of article 1, provides that "no person holding any office under the United States shall be a member of either house during his continuance in office."

The undersigned holds no office under the United States; has never received a commission from the United States, as stated in said memorial of contestant; hence the above cited section of the Constitution of the United States has no application in this case.

WM. VANDEVER.

COLLECTION DISTRICTS IN CALIFORNIA.

[To accompany bill H. R. No. 300.]

CORRESPONDENCE

IN RELATION TO

COLLECTION DISTRICTS,

AND

Reducing compensation of collectors and surveyors in California.

FEBRUARY 27, 1862.—Ordered to be printed.

TREASURY DEPARTMENT, *February 21, 1862.*

SIR: I have the honor to transmit herewith a draft of a bill, prepared in accordance with your request of the 19th instant, covering the suggestions contained in the two letters of the appraiser general of San Francisco, concerning a rearrangement of the collection districts in California, copies of which were transmitted to you, with my approval, on the 6th instant. I return the papers relating to the subject, as requested.

I am, very respectfully,

S. P. CHASE,
Secretary of the Treasury.

Hon. E. B. WASHBURN,
Chairman of Committee on Commerce, House of Reps.

TREASURY DEPARTMENT, *February 6, 1862.*

SIR: I have the honor to transmit herewith for your examination, and such action as you may deem proper, copies of two letters addressed to this department by the appraiser general of San Francisco, California.

The first letter, under date of December 26. suggests that the district of San Diego, San Pedro, Santa Barbara, and Monterey, might be abolished and attached to the San Francisco district, and inspectors appointed at those ports; or the salaries of the collectors

at San Diego, San Pedro, and Monterey might be reduced from \$3,000 to \$1,000 per annum, each, and the salary of the surveyor at Santa Barbara from \$2,000 to \$1,000. The reductions of the inspectors' salaries, coming within my province, have already been made. The deputy collector at Monterey, who is mentioned in the letter as receiving a salary of \$1,368 75, is paid by the collector, and is, therefore, no expense to the government.

The second letter, under date of December 28, recommends that the districts of Sonoma, San Joaquin, and Sacramento, be abolished and attached to the San Francisco district, and an inspector appointed at Benicia.

In the opinion of the appraiser general, the interests of the government would be as well subserved under the proposed arrangement as they now are; in which opinion I concur, and should Congress carry it into effect, there would be a saving to the government of nearly \$16,000 per annum.

I am, very respectfully, your obedient servant,

S. P. CHASE,

Secretary of the Treasury.

Hon. E. B. WASHBURN,

Chairman of Committee on Commerce, House of Reps.

UNITED STATES APPRAISER GENERAL'S OFFICE,
San Francisco, December 26, 1861.

SIR : I have visited and examined the several custom-houses on the southern coast, viz : at San Diego, San Pedro, and Monterey. The revenue collected at all these ports was derived from the importation of horned cattle and other live stock from Mexico ; but since the passage of the tariff act of March 3, 1857, admitting "animals living of all kinds" free of duty, there has been no revenue collected within these districts.

San Diego has an excellent harbor, but, from its geographic position, can never be a place of any considerable trade, unless it shall hereafter become the terminus of the Atlantic and Pacific railroad.

San Pedro is the most important point on the southern coast, and is destined at some future day to become a place of considerable importance. It is the natural outlet to the most productive portion of the southern country, and all imports and exports from Los Angeles and San Bernardino counties must necessarily pass through that part. The coastwise imports are nearly 300 tons per month, amounting in the aggregate to three millions of dollars annually ; and the exports of wine, fruit, wool, salt, and various articles of agricultural production are of equal value. Los Angeles is, perhaps, the most attractive spot in the southern section of California, and is destined to become a great agricultural and fruit bearing country.

Monterey, under the Spanish and Mexican governments, was the capital of Upper California, and the duties collected there once

exceeded \$100,000 per annum, but after the acquisition of the United States the business was wholly transferred to San Francisco, and the service in this district is now in a great measure preventive. Still it is an important point on the coast; has an excellent harbor where vessels of the largest class can always find a safe anchorage.

All these ports of entry and delivery were established by an act of Congress passed September 28, 1850, during what is commonly called the "flush times in California," and before the whole revenue and business of the State centered in San Francisco. The salaries were in conformity with the times, and were fixed at treble those of the adjoining State of Oregon. The time has now arrived when some action should be taken in regard to these ports on the southern coast, in order to guard against needless expenditure at a period when the country requires the utmost economy in every department of the government.

One of two plans could be adopted, either to abolish all the collection districts on the southern coast and attach them to the district of San Francisco, leaving it for the collector of the latter to appoint inspectors wherever necessary to protect the revenue; or to reduce the present salaries of the collector, surveyor, and inspectors to \$1,000 per annum, thus placing them on a footing with Port Townsend and Umpqua districts in Oregon.

I am of the opinion that the latter course would be more conducive to the public interests, for while there is no revenue collected at either of the above ports, they are all situated on the seacoast where vessels are liable to be shipwrecked or stranded, and where it is necessary to guard the revenue against the operations of the smuggler. By the annexed statement it will be seen that the present annual salaries paid to the several officers at these ports amount in the aggregate to \$15,106 25, but when reduced, in accordance with the plan recommended, will be about one-third this amount, or \$6,000 per annum.

I am, very respectfully, your obedient servant,

SAMUEL J. BRIDGE,
Appraiser General.

Hon. S. P. CHASE,
Secretary Treasury U. S., Washington, D. C.

UNITED STATES APPRAISER GENERAL'S OFFICE,
San Francisco, December 28, 1861.

SIR: I have visited and examined the custom-houses at Benicia, Stockton, and Sacramento. At the two latter ports not a single dollar of revenue has been collected since 1851, and there is no prospect that there ever will be in the future. They are both situated in the interior, on the San Joaquin and Sacramento rivers, which are navigated by steamers and small craft engaged in the coasting trade. All the above ports of entry were established by an act of

Congress passed September 28, 1850, based upon the trade in the early settlement of California and the subsequent discovery of gold. There never was, however, the slightest necessity for their location on these interior waters, for those places are only accessible through the Golden Gate, and all vessels that ever discharged on these rivers have first cast anchor in the harbor of San Francisco.

Benicia is the only one of these ports where the slightest revenue has been collected the past year, and that was derived from a single importation of coal by the Pacific Mail Steamship Company, amounting to \$905 27. This company have their workshops located at that place, while their steamers arrive and depart from San Francisco, and where the duties on the coal necessary for their use are almost wholly collected. Benicia is the only point in the three districts where even an inspector of the customs is required. It is barely possible that a vessel might pass through Raccoon Straits, and thus reach the interior without the payment of duties; but masters of vessels have never yet attempted the passage, and there is no probability that they ever will do so. An inspector stationed at Benicia would effectually guard the entrance to the Sacramento and the San Joaquin rivers, as every vessel bound out must pass through the Straits of Carquinas, on the shores of which that place is situated.

I therefore respectfully recommend that the districts of Sonoma, San Joaquin, and Sacramento, be wholly abolished and attached to the district of San Francisco, leaving it for the collector to appoint an inspector at Benicia, and to detail one to accompany a vessel to such place on the river as the importer may desire to have the cargo discharged. It will be seen by the annexed statement, that in addition to the rent and other incidental expenses of these districts, the salaries alone amount to \$9,000, which could be reduced without detriment to the public service to \$1,368 75, the compensation allowed by law to an inspector in the district of San Francisco.

I am, very respectfully, your obedient servant,

SAM. J. BRIDGE,
Appraiser General.

Hon. S. P. CHASE,

Secretary Treasury United States, Washington, D. C.

Statement of the annual compensation paid at the several ports on the San Joaquin and Sacramento rivers, with the proposed reduction on the same.

	Present compensation.	Proposed compensation.
District of Sonoma, 1 collector	\$3, 000 00	.....
District of San Joaquin, 1 collector	3, 000 00	.....
District of Sacramento, 1 collector	3, 000 00	.....
The above districts to be abolished and attached to the district of San Francisco, with an inspector at Benicia, at \$3 75 per day .....	.....	\$1, 368 75
	9, 000 00	1, 368 75

Statement of the annual compensation paid at the several ports of the southern coast of California, with the proposed reduction on the same.

	Present compensation.	Proposed compensation.
San Diego, 1 collector	\$3, 000 00	\$1, 000 00
San Pedro, 1 collector	3, 000 00	1, 000 00
Santa Barbara, 1 surveyor	2, 000 00	1, 000 00
Monterey, 1 collector	3, 000 00	1, 000 00
1 deputy collector, unnecessary	1, 368 75	.....
1 inspector at Sandy Cruz	1, 368 75	1, 000 00
1 inspector at San Luis Obispo	1, 368 75	1, 000 00
	15, 106 25	6, 000 00

DEFENCE OF DELAWARE RIVER AND BAY.

RESOLUTIONS.

THE STATE OF PENNSYLVANIA

IN SENATE,

The Defence of Delaware River and Bay.

Passed by the Senate, February 27, 1862.

RESOLUTIONS relative to the defence of the Delaware River and Bay.

Whereas new exigencies have arisen to force upon the attention of Pennsylvania the unprotected condition of the eastern coast of the State against hostile invasion:

And whereas the States of New Jersey and Delaware are alike interested in a system of defence along the Delaware River and Bay: Therefore—

Be it resolved by the Senate and House of Representatives of the Commonwealth of Pennsylvania in general assembly, met, That moved by the urgent solicitude in view of the fact that the United States Government has upon this subject, and upon the defence of the coast of the State, the attention of the most powerful and successful efforts to create a system of adequate defence for the Delaware River and Bay.

Resolved, further, That the governor of this Commonwealth is requested to confer with the governors of New Jersey and Delaware to secure the co-operation of these States in the performance of this important object, alike indispensable to the interest of the three States.

Resolved, further, That the governor of this Commonwealth is requested to transmit a copy of these resolutions to the governor of New Jersey, the governor of Delaware, and to each of our senators and representatives in Congress.

JOHN BOWEN,

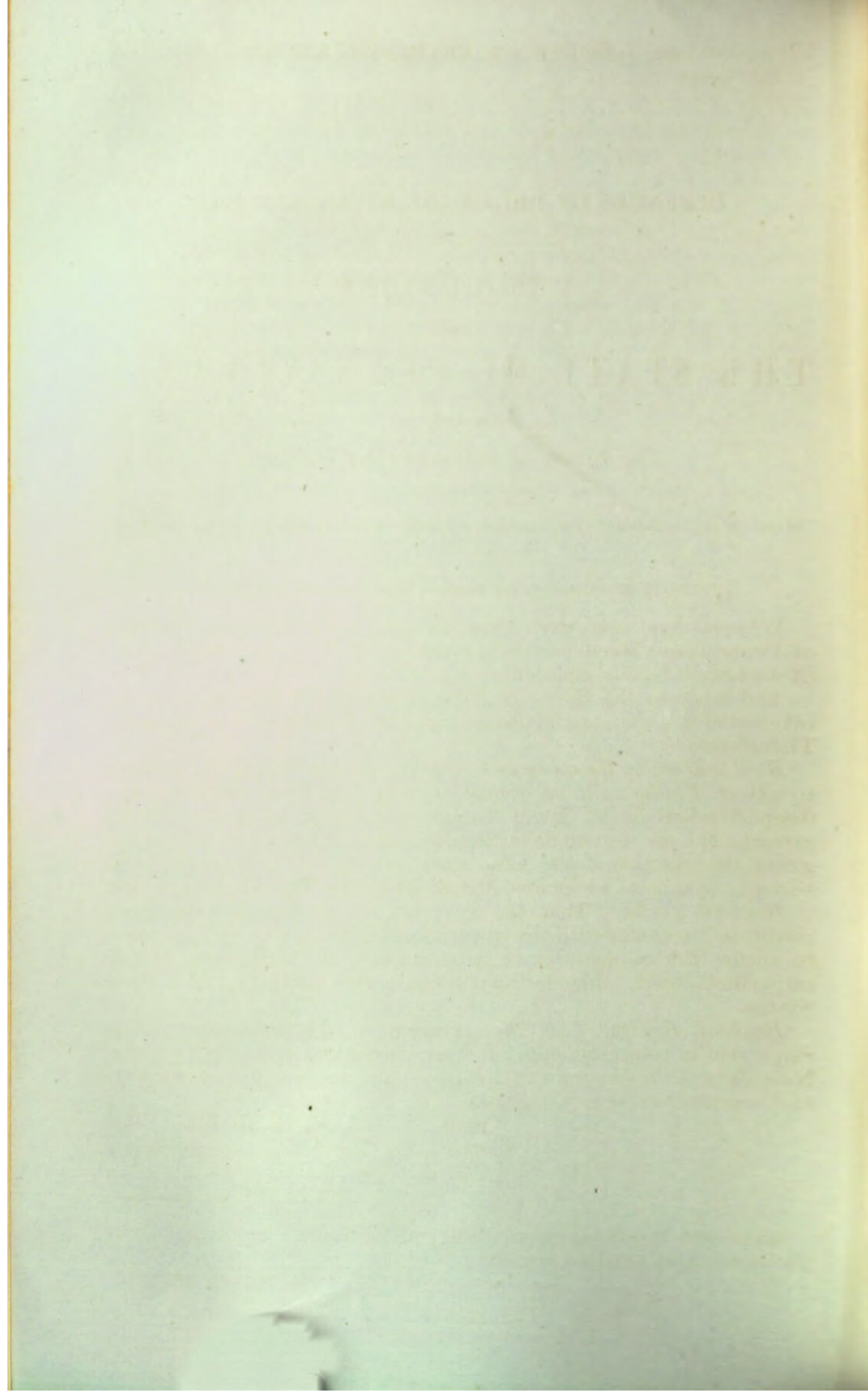
Speaker of the House of Representatives.

L. W. HALL,

Speaker of the Senate.

Approved the twenty-seventh day of February, and Declared our
thousand eight hundred and sixty-two.

A. G. CLEVER,



DEFENCES OF DELAWARE RIVER AND BAY.

RESOLUTIONS

OF

THE STATE OF PENNSYLVANIA

IN RELATION TO

The defences of Delaware river and bay.

MARCH 3, 1862.—Referred to the Committee on Military Affairs, and ordered to be printed.

RESOLUTIONS relative to the defences of the Delaware river and bay.

Whereas new exigencies have arisen to force upon the attention of Pennsylvania the unprotected condition of the eastern coast of the State against hostile invasion :

And whereas the States of New Jersey and Delaware are alike interested in a system of defences along the Delaware river and bay :
Therefore—

Be it resolved by the senate and house of representatives of the commonwealth of Pennsylvania in general assembly met, That, moved by the deepest solicitude in view of continued delay by the United States government, we urge upon our senators and representatives in Congress the exertion of the most strenuous and immediate efforts to secure a system of adequate defences for the Delaware river and bay.

Resolved, further, That the governor of this commonwealth is requested to confer with the governors of New Jersey and Delaware to secure the co-operation of those States in the furtherance of this important object, alike indispensable to the interest of the three States.

Resolved, further, That the governor of this commonwealth is requested to transmit a copy of these resolutions to the governor of New Jersey, the governor of Delaware, and to each of our senators and representatives in Congress.

JOHN ROWE,

Speaker of the House of Representatives.

L. W. HALL,

Speaker of the Senate.

Approved the twenty-seventh day of February, anno Domini one thousand eight hundred and sixty-two.

A. G. CURTIN.

OFFICE OF THE SECRETARY OF THE COMMONWEALTH,
Harrisburg, February 27, 1862.

PENNSYLVANIA, ss :

I do hereby certify that the foregoing is a true and correct copy of the original act of the general assembly entitled "Resolutions relative to the defences of the Delaware river and bay," as the same remains on file in this office.

In testimony whereof, I have hereunto set my hand and
[L. s.] caused the seal of the secretary's office to be affixed the day
and year above written.

ELI SLIFER,
Secretary of the Commonwealth.

PAYMENT OF VOLUNTEERS.

RESOLUTIONS

OF

THE STATE OF PENNSYLVANIA

IN RELATION TO

The payment of volunteers.

MARCH 3, 1862.—Referred to the Committee on Military Affairs, and ordered to be printed.

JOINT RESOLUTION instructing our senators and representatives in Congress to procure the passage of an act relative to the payment of volunteers.

Whereas, by a general order of the War Department at Washington, volunteers in the service of the United States are entitled to pay from the time of their enlistment into service; and whereas some of the volunteer regiments of Pennsylvania have only received pay from the time they were mustered into the service of the United States, whilst others have received their full pay, under the order of the War Department, from the time of their enlistment; and whereas some of the officers have received pay from the dates of their commissions, and a large majority of them only from the dates at which they were mustered into service; and whereas it is just that the officers and men should all receive pay from the time at which they separate themselves from their business pursuits and devote themselves to the service of their country, a period involving much labor and great expense to the officers: Therefore—

Resolved, That our senators in Congress are hereby instructed, and our representatives are requested, to immediately procure the passage of an act by Congress, providing for the payment of volunteers from the time of their enlistment, and of officers from the time at which, by order of the governor, they were or may be hereafter placed on recruiting service; and further, to make sufficient provisions for the payment of expenses incurred in recruiting companies and regiments for the volunteer army of the United States, in all those cases where the companies or regiments have been or may be hereafter mustered into the service of the United States, and also in

cases where officers, under proper authority, have raised companies or regiments, or parts of companies or regiments, of the command of which they have been deprived by military necessities beyond their control: *Provided*, Such officers shall themselves have entered the service of the United States in some military company in the line.

Resolved, That the governor be requested to furnish a copy of this resolution to each of our senators and representatives in Congress.

JOHN ROWE,

Speaker of the House of Representatives.

L. W. HALL,

Speaker of the Senate.

Approved the twenty-sixth day of February, anno Domini one thousand eight hundred and sixty-two.

A. G. CURTIN.

OFFICE OF THE SECRETARY OF THE COMMONWEALTH,

Harrisburg, February 26, 1862.

PENNSYLVANIA, ss :

I do hereby certify that the foregoing is a true and correct copy of the original act of the general assembly, entitled "Joint resolution instructing our senators and representatives in Congress to procure the passage of an act relative to the payment of volunteers," as the same remains on file in this office.

In testimony whereof I have hereunto set my hand and [L. s.] caused the seal of the secretary's office to be affixed, the day and year above written.

ELI SLIFER,

Secretary of the Commonwealth.

STEAMSHIP LINE TO ASPINWALL.

LETTER
OF
THE POSTMASTER GENERAL

IN RELATION TO

Carrying the South Pacific mails by the steamship line to Aspinwall.

MARCH 5, 1862 — Referred to the Committee on the Post Office and Post Roads, and ordered to be printed.

[Foreign, No. 326.]

UNITED STATES OF AMERICA,
Post Office Department, Washington, March 3, 1862.

GENTLEMEN: I have received formal notice from Cornelius Vanderbilt, controlling the steamship line to Aspinwall, that he will not take the South Pacific or any other mails after the 21st instant. This is an attempt to coerce Congress to contract with him, on his own terms, for carrying these mails. I called the attention of Congress to the coercive system exercised by the railroad companies upon the government in my annual report. I trust suitable measures will be adopted before adjournment to maintain the public interests in that behalf. But this steamboat coercion requires immediate attention. Unless something is done at once, vast mercantile interests will be seriously affected.

My own opinion is, that this and every other line of steamers should be required to take mails to their ports of destination upon such terms as are now or may hereafter be allowed by Congress, as the condition of clearance. It is not pretended that the compensation now given is not sufficient for the service rendered. No private person pays them for any kind of transportation at the rate paid by the government for mail matter. We give all, and more than we make out of it, and no persons are so much benefited, incidentally,

as the owners of the ships, for the bulk of the correspondence relates to the trade carried on by their vessels.

Yours, respectfully,

M. BLAIR,
Postmaster General.

Messrs. COLLAMER and COLFAX,
Chairmen, &c., &c., &c.,
Senate and House of Representatives.

CHARLES HENRY FOSTER.

MEMORIAL

OF

LOYAL CITIZENS OF NORTH CAROLINA,

ASKING

The admission of Charles Henry Foster as the representative of the second congressional district in said State in the House of Representatives of the United States, and other papers pertaining thereto.

MARCH 6, 1862.—Referred to the Committee of Elections, and ordered to be printed.

To the honorable the Senate and House of Representatives of the United States:

Your memorialists, citizens of the second congressional district of North Carolina, respectfully represent: That they are and have been loyal to the government of the United States and obedient to their duties as citizens thereof, and that they are earnestly desirous of a representation in Congress, and that for this purpose three several elections have been held, namely, on the 28th November, 1861, the 16th January and the 30th January, 1862, at each of which Charles Henry Foster did receive all the votes so cast; the polls being opened and the voting being conducted, so far as was possible, in accordance with the requirements of law. Wherefore your petitioners respectfully ask that the said Charles Henry Foster be admitted as their representative in Congress, he being the unanimous choice of all the loyal men of the said second district who are able to express their preferences at the ballot-box.

In case, however, compliance with the prayer of this memorial be refused, your petitioners would humbly ask that Congress will, as soon as may be, prescribe a time, places, and manner of holding an election for a representative of the said second district, under the authority conferred upon your honorable bodies in the first paragraph of section 4 of article first of the Constitution of the United States.

M. N. Tayler.
Tilman Bracham.

Merchant Ballance.
James Styron.

John B. Whidbee.
 George W. Stowe.
 David B. Stowe.
 Robert Styron.
 W. W. Styron.
 William Ballows.
 Wallace S. Austin.
 Benjamin Ballance.
 John W. Gaskins.
 Holloway B. Gaskins.
 Tilmon O'Neal.
 Francis N. Austin.
 Wallace S. Ballance.
 Joseph W. Gaskins.
 Z. Gaskins.
 Thomas G. Willis.
 Samuel P. Willis.
 William D. Austin.
 Isac F. Austin.
 Allen Burrus.

Curtis O. Stowe.
 George L. Styron.
 Christopher W. Peel.
 P. Scarborough.
 William Scarborough, jr.
 John C. Odin.
 Alpheus W. Simpson.
 William Stone.
 Nathan Stone.
 Isaiah Stone.
 Amasa Simpson, J. P.
 John F. O'Neal.
 John Austin.
 Charles L. Odin.
 George T. Willis.
 John H. Willis.
 Stephen R. Styron.
 Cornelius Austin.
 James Styron, sr.

To the honorable the Senate and House of Representatives of the United States:

Your memorialists, citizens of the second congressional district of North Carolina, respectfully represent: That they are and have been loyal to the government of the United States and obedient to their duties as citizens thereof, and that they are earnestly desirous of a representative in the national Congress, and that for this purpose three several elections have been held, namely, on the 28th November, 1861, the 16th of January and the 30th of January, 1862, at each of which Charles Henry Foster did receive all of the votes so cast; the polls being opened and the voting being conducted at each election, so far as was possible, in accordance with the requirements of law. Wherefore your petitioners respectfully ask that the said Charles Henry Foster be admitted as their representative in Congress, he being the unanimous choice of all the loyal men of the said second district who are able to express their preference at the ballot-box.

In case, however, compliance with the prayer of this memorial be refused, your petitioners would humbly ask that Congress will, as soon as may be, prescribe a time, place, and manner of holding an election for a representative for the said second district, under the authority conferred upon your honorable bodies in the first paragraph of section 4 of article 1st of the Constitution of the United States.

Jesse N. Robinson.
 B. T. Fulcher.
 W. B. Whidbee.
 Tilmon F. Adkins.
 Robert Robinson.

David W. Williams.
 Dennis Creed.
 Abel A. Farrow.
 Martin A. Basnight.
 Robert B. Basnight.

Thomas Whidbee.
 Nelson Whidbee.
 Charles Foster.
 David Basnight.
 Zachariah Basnight.
 John B. Fulchem.
 Willoughbee B. Basnight.
 John N. Fulcher.
 Major Whidbee.
 Joseph Whidbee.
 Hillery Whidbee.
 William L. Adkins.
 William Johnson.
 James R. Johnson,
 Jabez Midgett.
 Elisha Scarborough.
 Jesse Murphy.

John L. Foster.
 William A. Brady.
 William R. Whitson.
 James Brinson.
 Daniel Clark.
 James H. Whidbee.
 Ira H. Whidbee.
 J. J. Foster.
 Fremon Neal.
 Albin B. Fulcher.
 John B. Johnson.
 Alfred Murphy.
 Silvester Robinson.
 Benjamin F. Robinson.
 Christopher Robinson.
 Nevel C. Wade.
 Jacob Midgett.

“The time, place, and manner of holding elections for senators and representatives shall be prescribed in each State by the legislature thereof, but Congress may at any time, by law, make or alter such regulations, except as to the place of choosing Senators.”—(*Constitution United States, article 1, section 4.*)

To the honorable the Senate and House of Representatives of the United States:

Your memorialists, citizens of the second congressional district of North Carolina, respectfully represent: That they are and have been loyal to the government of the United States and obedient to their duties as citizens thereof, and that they are earnestly desirous of a representation in the national Congress, and that for this purpose three several elections have been held, namely, on the 28th November, 1861, the 16th January and the 30th January, 1862, at each of which Charles Henry Foster did receive all the votes so cast; the polls being opened and the voting being conducted at each election, so far as was possible, in accordance with the requirements of law. Wherefore your petitioners respectfully ask that the said Charles Henry Foster be admitted as their representative in Congress, he being the unanimous choice of all the loyal men of the said second district who are able to express their preference at the ballot-box.

In case, however, compliance with the prayer of this memorial be refused, your petitioners would humbly ask that Congress will, as soon as may be, prescribe a time, places, and manner of holding an election for a representative for the said second district, under the authority conferred upon your honorable bodies in the first paragraph of section 4, article first, of the Constitution of the United States, as follows:

“The times, places, and manner of holding elections for senators and representatives shall be prescribed in each State by the legisla-

ture thereof; but the Congress may at any time, by law, make or alter such regulation, except as to the places of choosing senators."—
(*Constitution United States, art. 1, sec. 4.*)

Joseph P. Midyett.
Daniel S. Midyett.
Watson S. Midyett.
Damrong Midyett.
Ira Midyett.
Ebenezer Midyett.
Ira Midyett.
George W. Midyett.
Allen Gray.
Rinalda M. O'Neal.
Ezekiel Hooper.
Charles F. Thomas.
Edward Paine.
David O. Midyett.
Richard W. Midyett.
William C. Hooper.
Richard G. Hooper.
Cyrus Hooper.
William Gray.
Edward Hooper.

Ezekiel Midyett.
Gillmon F. Pugh.
Wallace D. Gray.
Edmund D. Stow.
Lafayette Douglas.
Anthony D. Gray.
Anthony L. Meekins.
James Meekins.
Daniel S. Meekins.
Jeremiah H. Meekins.
Jethrow H. Midyett.
Richard Midyett.
John A. Midyett.
E. O. Hooper.
J. A. Midyett.
David Gray.
Joseph S. Gray.
David P. Gray.
William W. Hooper.—(39.)

To the honorable the Senate and House of Representatives of the United States:

Your memorialists, citizens of the second congressional district of North Carolina, respectfully represent: That they are and have been loyal to the government of the United States and obedient to their duties as citizens thereof, and that they are earnestly desirous of a representation in the national Congress, and that for this purpose three several elections have been held, namely, on the 28th November, 1861, the 16th January and the 30th January, 1862, at each of which Charles Henry Foster did receive all the votes so cast; the polls being opened, and the voting being conducted at each election, so far as was possible, in accordance with the requirements of law. Wherefore your petitioners respectfully ask that the said Charles Henry Foster be admitted as their representative in Congress, he being the unanimous choice of all the loyal men of the said second district who are able to express their preference at the ballot-box.

In case, however, compliance with the prayer of this memorial be refused, your petitioners would humbly ask that Congress will, as soon as may be, prescribe a time, place, and manner of holding an election for a representative for the said second district, under the

authority conferred upon your honorable bodies in the first paragraph of section 4 of article first of the Constitution of the United States.*

Tilmon F. Miller.

John Midyett.

Nacy Scarbrough.

Thomas Gray.

Hezekiah Miller.

Jacob Farrow.

Noah Price.

George O'Neal.

John Barnes.

Lott Farrow.

Abner Gray.

Stephen Gray.

Richard Scarborough.

Malicha Gray.

John P. Farrow.

Lorenzo Hooper.

Joseph S. Williams.

John A. Scarborough.

Joseph Scarborough.

Christopher Miller.

Baitman P. Miller.

Arnold Scarborough.

Henderson Scarborough.

Nathan Gray.

Davis Gray.

Oliver Gray.

Cyrus K. Hooper.

Dammon G. Meekins.

Holivy Price.

Watron Gray.

Fields Meekins.

Banister Barnes.

Allen Gray.

Wallis Gray.

Tilbey Gray.

Joshua Gray.

Tilmon Price.

Francis Farrow.

Lancaster Farrow.

Richard Farrow.

John Gray.

Joseph C. Gray.—42.

I, Tilmon F. Miller, of Hyde county, State of North Carolina, do hereby upon oath depose and say that the names attached to the above memorial are those of citizens of the said county and State, and were either signed by themselves or by me at their express request. As witness my hand and seal, at Hatteras, February 20, 1862.

TILMON F. MILLER. [SEAL.]

Personally appeared before me, A. Simpson, a justice of the peace in and for Hyde county, State of North Carolina, this 20th day of February, 1862, the above-named Tilmon F. Miller, and on oath subscribed the above statement. As witness my hand and seal this day.

A. SIMPSON, J. P. [SEAL.]

NINTH PRECINCT VOTE.

To Brigadier General Thomas Williams, commanding at Fort Hatteras:

At an election held on Thursday, 16th day of January, one thousand eight hundred and sixty-two, at the school-house at Chick-

* The times, places, and manner of holding elections for senators and representatives shall be prescribed in each State by the legislature thereof; but the Congress may at any time, by law, make or alter such regulations, except as to the place of choosing senators.—(Constitution U. S., art. 1, sec. 4.)

amacomico, in the county of Hyde, being the ninth election precinct of the said county, on closing the polls and counting the votes, it appeared that for representative in Congress Charles H. Foster had eighty-one (81) votes.

In testimony whereof, we have hereunto set our hands the said 16th day of January, 1862.

CORNELIUS PAINE,
WM. D. PUGH,
WM. H. MEEKINS,
Inspectors of election.
S. M. PUGH,
Poll holder.

POLL-LIST.

This is to certify that the following is a correct list of the votes at an election for a representative in Congress, held at Chickamacomico, on Thursday, the 16th day of January, 1862 :

Names of voters.

- | | |
|-------------------------|-------------------------|
| 1 Joseph P. Midyett. | 30 Ira Midyett, sr. |
| 2 Richard W. Midyett. | 31 Edward Paine. |
| 3 John A. Midyett. | 32 William Paine. |
| 4 Ezekiel Midyett, jr. | 33 Abraham F. Hooper. |
| 5 David O. Midyett. | 34 Nicodemus Midyett. |
| 6 Charles F. Thomas. | 35 Cornelius Paine. |
| 7 Lafayette Douglass. | 36 Sparrow M. Pugh. |
| 8 Jethrow A. Midyett. | 37 Richard Midyett. |
| 9 Dammon G. Midyett. | 38 Rinaldo M. O'Neal. |
| 10 Banister M. Gray. | 39 Ira Midyett, sr. |
| 11 James Meekins. | 40 Jeremiah H. Meekins. |
| 12 Ezekiel Hooper. | 41 Tilmon F. Pugh. |
| 13 Davis Gray. | 42 Ebenezer Midyett. |
| 14 William Gray. | 43 Edward O. Hooper. |
| 15 Benj. S. Pugh. | 44 William C. Hooper. |
| 16 Watson L. Midyett. | 45 George W. Midyett. |
| 17 Cyrus Hooper. | 46 Wallace D. Gray. |
| 18 John P. Pugh. | 47 David P. Gray. |
| 19 Edmund D. Stow. | 48 Daniel S. Meekins. |
| 20 Richard S. Hooper. | 49 Edward R. Hooper. |
| 21 Anthony D. Gray. | 50 William D. Pugh. |
| 22 Joseph S. Gray. | 51 William H. Meekins. |
| 23 Luke M. Gray. | 52 Wallace A. Styron. |
| 24 Jethrow H. Midyett. | 53 Allen W. Gray. |
| 25 John Best. | 54 William W. Hooper. |
| 26 William Wethering. | 55 John H. Scarborough. |
| 27 Little B. Midyett. | 56 William J. Meekins. |
| 28 Daniel S. Midyett. | 57 Ezekiel Scarborough. |
| 29 Ezekiel Midyett, sr. | 58 Zion F. Scarborough. |

- | | |
|-------------------------|--------------------------|
| 59 Stancil Scarborough. | 71 Thomas W. Gray. |
| 60 Little J. Gray. | 72 Joseph Scarborough. |
| 61 Richard G. Farrow. | 73 Abraham Barnes. |
| 62 Silby Gray. | 74 Simon O'Neal. |
| 63 Banister M. Barnes. | 75 John O'Neal. |
| 64 Jacob Midyett. | 76 Henry B. Scarborough. |
| 65 Edward S. Midyett. | 77 Batman Price. |
| 66 Edmund D. Gray. | 78 Balman P. Miller. |
| 67 Francis Farrow. | 79 Isaac L. Hooper. |
| 68 Wallace Gray, sr. | 80 Tilman F. Miller. |
| 69 Tilmon J. Price. | 81 Edwin D. Midyett. |
| 70 Isaiah Stow. | |

To the honorable the Senate and House of Representatives of the United States:

The memorial of Marble Nash Taylor, a citizen of North Carolina, respectfully represents: That the loyal men of that portion of the second congressional district of North Carolina which is opened to the freedom of the ballot are earnestly and unanimously desirous to be readmitted to their accustomed right of representation in the national Congress, and that they are ready and willing now as ever heretofore to bear their proportionate and equitable share of the burdens of the government. Wherefore, your memorialist on their behalf, and being thereto by them requested, respectfully asks and prays your honorable body to pass an act under the authority granted you in article I, section IV of the Constitution of the United States, to enable the loyal citizens aforesaid to legally choose a representative in the House of Representatives of the United States. And, as in duty bound, your memorialist will ever pray.

MARBLE NASH TAYLOR.

HYDE COUNTY, *North Carolina*, February 18, 1862.

MEMORIAL OF CHARLES HENRY FOSTER.

To the honorable the Senate and House of Representatives of the United States:

The memorial of Charles Henry Foster, a citizen of North Carolina, respectfully represents: That your memorialist is the representative, by three several and unanimous elections, of the citizens of that portion of the second congressional district of North Carolina which has been restored to the *de facto* jurisdiction of the Union; and that, furthermore, he has been by his said constituents requested to act as their agent, attorney, or commissioner in seeking to procure the prompt recognition, by the national government, of their equal rights and privileges as American citizens.

Your memorialist would, therefore, in this capacity and on the behalf aforesaid, respectfully but earnestly request that your honorable body pass, as soon as may be, an act enabling the electors of the second congressional district of North Carolina to choose a representative of the said district in the House of Representatives of the United States, under the authority conferred upon Congress in article I, section IV, of the United States Constitution.*

Petitions of concurrent prayer, almost unanimously signed, from the loyal men of this section of the district, are now in the hands of your memorialist.

CHARLES HENRY FOSTER.

HYDE COUNTY, N. C., *February* 17, 1862.

* Constitution of the United States, article 1, section IV: The time, place, and manner of holding elections for senators and representatives shall be prescribed, in each State, by the legislature thereof; but the Congress may at any time, by law, make or alter such regulations, except as to the place of choosing senators.

CUSTOM-HOUSE BUILDING AT PORT TOWNSEND, WASHINGTON TERRITORY.

MEMORIAL

OF

MEMBERS OF THE LEGISLATIVE ASSEMBLY

OF

WASHINGTON TERRITORY,

FOR

The erection of a custom-house building at Port Townsend, in said Territory.

MARCH 10, 1862 — Referred to the Committee on Commerce, and ordered to be printed.

To the honorable the Senate and House of Representatives of the United States of America in Congress assembled.

The memorial of members of the legislative assembly of the Territory of Washington, representing the people of the collection district of Puget Sound, (the legislature not yet assembled,) respectfully sets forth :

That the constantly increasing commerce of the Puget Sound district, and especially the increasing trade with British Columbia, has fully demonstrated the necessity of a substantial custom-house building at the city of Port Townsend, the present port of entry, and the point of ingress and egress of the main commerce of the Territory.

That the official charts of the Straits of Fuca and waters of the Territory show conclusively the utter impracticability of any other point as the permanent port of entry for the district without subjecting the commerce, especially that with British Columbia, to serious loss of time and consequent dangers. Wherefore your memorialists pray:

2 CUSTOM-HOUSE, PORT TOWNSEND, WASHINGTON TERRITORY.

That the sum of ten thousand dollars be appropriated by your honorable bodies, for the erection of said building.

Dated at Olympia, December 2, 1861.

FRANK CLARK.

B. F. SHAW.

T. D. HINCKLEY.

B. B. HOLBROOK.

T. B. PAGE.

E. A. WILLSON.

JAS. L. FERGUSON.

J. I. WILLIAMSON.

J. H. LETTER.

B. E. LAMBARD.

JOHN THORNTON.

JOHN DENNY.

J. B. BILES.

PAUL K. HUBBS.

A. R. BURBANK.

JOHN WEBSTER.

WM. COOK.

R. F. RUTH.

A. L. GAUTIS.

WM. McLANE.

MAIL LINE BETWEEN SAN FRANCISCO AND JAPAN AND
CHINA.

RESOLUTIONS

OF THE

LEGISLATURE OF CALIFORNIA,

PRAYING

*The establishment of a mail line between San Francisco and Japan and
China.*

MARCH 11, 1862.—Referred to the Committee on Commerce, and ordered to be printed.

Resolved by the senate, the assembly concurring, That our senators in Congress be instructed, and our representatives requested, to urge upon Congress the enacting of a law establishing a mail route between the port of San Francisco, in this State, and ports in Japan and China.

Resolved, That the governor be requested to forward a copy of the above resolution to our senators and representatives in Congress.

Adopted January 29, 1862.

STATE OF CALIFORNIA,
Department of State.

I, William H. Weeks, secretary of state of the State of California, do hereby certify that the above is a true, full, and correct copy of an original concurrent resolution adopted by the legislature of this State, now on file in my office.

[L. S.] Witness my hand and the great seal of State, at office, in Sacramento, California, the 3d day of February, A. D. 1862.

WM. H. WEEKS,

Secretary of State,

By A. A. H. TUTTLE, *Deputy.*

ALFRED D. LLOYD, JR., EDITOR
JAMES C. HARRIS, JR., MANAGING EDITOR
JAMES C. HARRIS, JR., MANAGING EDITOR

RECEIVED
MAY 1 1913

REPORT OF THE JOINT LEGISLATIVE

COMMISSIONERS OF THE
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
CHICAGO, ILL., MAY 1, 1913

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REPORT OF THE JOINT

COMMISSIONERS OF THE

LEGISLATIVE

APPROVING THE POLICY OF THE PRESIDENT IN RELATION TO THE WAR.

RESOLUTIONS

ADOPTED BY THE

PEOPLE OF THE TOWN OF NEWPORT,

IN THE

State of New Hampshire, without distinction of party, approving the policy of the President in relation to the war.

MARCH 13, 1862.—Laid on the table, and ordered to be printed.

The people of the town of Newport, in the county of Sullivan, and State of New Hampshire, without distinction of party, having assembled at their town hall on the 22d day of February, A. D. 1862, in accordance with the proclamation of the President of the United States, for the purpose of reading the farewell address of the father of his country, resolve as follows:

1. That we approve the policy of the President of the United States in conducting the present civil war, in which our country has been unfortunately involved, solely for the purpose of preserving the Union, and restoring the supremacy of the Constitution and laws of the United States in every State and Territory thereof; that we especially approve his patriotic refusal to make the emancipation of the slaves a part of that policy, believing that such a measure could not fail to prolong the war and aggravate its horrors; and that as long as he shall adhere to the policy herein indicated we pledge to him our constant and cordial support.

2. That these resolutions be signed by the president of this meeting, and a copy thereof transmitted to the President of the United States, and to each of our senators and representatives in Congress, to be presented to their respective bodies.

PAUL J. WHEELER,

President of the meeting of the citizens of Newport, N. H.

A true copy.

Attest:

PAUL J. WHEELER,

President.

APPROVING THE POLICY OF THE PRESIDENT IN RELATION TO THE WAR.

RESOLUTIONS

REPORTED BY THE

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PAUL J. WHEELER,

President of the meeting of the citizens of Newport, N. H.

PAUL J. WHEELER,

President.

A true copy.
Attest.

WASHINGTON CANAL.

LETTER

FROM THE

COMMISSIONER OF PUBLIC BUILDINGS,

IN RELATION

To the condition of the Washington canal, and its effect on the health of the city.

MARCH 13, 1862.—Referred to the Committee on Public Buildings and Grounds, and ordered to be printed.

OFFICE COMMISSIONER OF PUBLIC BUILDINGS,
Capitol of the United States, Washington, March 11, 1862.

GENTLEMEN : In my annual report, made to the Secretary of the Interior and by him submitted to Congress at the commencement of the present session, I called his attention to the condition of the Washington canal in the following language :

“ The Washington canal, constructed at so great an expense, and which was, at the time it was made, regarded as one of the greatest possible improvements to the city of Washington, is now nothing more nor less than a public nuisance. It is the grand receptacle of nearly all the filth of the city. The waste from all the public buildings, the hotels, and very many private residences, is drained into it. It is now in many places filled with accumulations from such sources, so as to present beds of rank vegetation and offensive soil above the level of the water. Unless something be done to clear away this immense mass of fetid and corrupt matter, the good citizens of Washington must, during some hot season, find themselves visited by a pestilence ! I regard the abatement of this nuisance of more importance, in a sanitary point of view, than almost any other improvement in the whole city. The health of the entire population and the lives of thousands depend upon it. The question is, ‘ What can be done ? ’

“ In the first place, the canal must be thoroughly dredged. An immense amount of filling will be necessary about the Capitol as soon

as the grounds come to be graded, and it will be found difficult to obtain the material for such filling. I had considerable experience when I had the honor of holding the office of Commissioner several years ago, and can speak from actual knowledge. The deposit in the canal will serve the purpose admirably. It can be taken up by a dredge-boat, deposited without any shovelling in carts, and hauled to the place where it is wanted. The actual expense of filling up on the south side of the Capitol square will be much less than it would be were the material for filling shovelled into carts, even if it could be procured at a reasonable distance and carried to the place where wanted, so that the dredging would really be a matter of economy. I have no means of submitting an exact estimate with this report of the sum necessary to do the work recommended, but will procure one as soon as possible, and submit it, either to you or to the appropriate committee of the House of Representatives.

“As soon as the canal is thoroughly cleaned out by the erection of a proper tide-gate at a proper place, which will shut of itself as soon as the water commences falling, and retain all the water above it, and then by the opening of it at low water the canal can be thoroughly swept out at least once every twenty-four hours, and always kept clean.”

Congress has as yet done nothing in relation to this dreadful nuisance. In the pressure upon it of business of great importance to the interests of the country, it is not strange that local matters like this should be overlooked. This is, however, a thing that ought to be attended to, as it involves the health of Congress itself, and of all the inhabitants and sojourners in this city.

I am induced to write this letter at this time by the entreaties of citizens, who assure me that it is the opinion of the most eminent physicians of this city that unless some measures are taken to remove this bed of filth from the heart of the city, that as soon as the heat of summer comes a pestilence will accompany it such as we have seldom if ever been visited with. The canal has been very rapidly filling up during the past year, and never has been in anything like so offensive a state as it now is. I think an appropriation of twelve thousand dollars, honestly and judiciously expended, will so clean and purify the canal as to prevent any deleterious effects on the health of the city from it. If that sum of money could be placed at my disposal at once, sufficient progress could be made before summer arrives to prevent any sickness arising from that source.

I have called your attention to this subject as a duty I owe to yourselves, and to all my fellow-citizens and sojourners here; and I hope you will deem it of sufficient importance to urge upon Congress the small appropriation for which I respectfully ask.

I am, with high respect, your obedient servant,

B. B. FRENCH, *C. P. B.*

MARCH 13.

After writing the foregoing, I thought it proper to obtain the views of a practical person, and addressed a note, accompanied by this

letter, to William Forsyth, esq., the able and competent surveyor of the city of Washington.

I enclose a copy of his reply, by which you will see that he estimates the cost of the *complete dredging* of the canal at \$35,000. Still I have no doubt that for \$12,000 or \$15,000 so much of the offensive matter can be removed as to prevent it from being the cause of miasmatic sickness.

Respectfully,

B. B. FRENCH, *Com. of P. B.*

Hon. SOLOMON FOOT,

Chairman of Com. on Public Buildings and Grounds, Senate.

Hon. CHARLES R. TRAIN,

Chairman of Com. on Public Buildings and Grounds, H. of Reps.

SURVEYOR'S OFFICE,
Washington, March 13, 1862.

SIR: I herewith submit the information required in relation to the Washington city canal, referred by you to me this day.

I entirely concur in all you have said of the condition of the canal and the consequences that may result from it, unless the accumulation of years of deposit from the surface drainage of the streets and avenues and filth from the sewers leading from the Capitol and other public buildings (now exposed at low water) are removed. The amount asked for is not sufficient for what you purpose to do, which, in my judgment, is an imperative necessity; my estimate of the quantities to be removed is, in the aggregate, 233,000 cubic yards, which, at fifteen cents per yard, would, in round numbers, amount to \$35,000; the whole amount of deposits will be required to grade the lot south of the Capitol and other public reservations which are below the established grade, and remove the nuisances which you so ably referred to in your letter to the Hon. Solomon Foot.

Very respectfully, your obedient servant,

WM. FORSYTH,
City Surveyor.

Hon. B. B. FRENCH,

Commissioner of Public Buildings.

letter to William Forsyth, esq., the able and competent surveyor of the city of Washington. I enclose a copy of his reply, by which you will see that he estimates the cost of the complete drainage of the canal at \$25,000. Still I have no doubt that for \$12,000 or \$15,000 so much of the offensive matter can be removed as to prevent it from being the cause of insupportable sickness.

Respectfully,

R. B. FRENCH, Com. of P. B.

Hon. Solomon Foot,
Chairman of Com. on Public Buildings and Grounds, Senate.
Hon. CHARLES H. TRIST,
Chairman of Com. on Public Buildings and Grounds, H. of Reps.

SURVEYOR'S OFFICE,
Washington, March 13, 1862.

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Very respectfully, your obedient servant,

WM. FORSYTH,

City Surveyor.

Hon. R. B. French,
Commissioner of Public Buildings.

DUTIES ON WOOL.

RESOLUTIONS

OF

THE STATE OF MAINE,

IN RELATION TO

The duties on wool and increase of protection to agricultural products generally.

MARCH 14, 1862.—Referred to the Committee of Ways and Means, and ordered to be printed.

STATE OF MAINE.

Resolves relating to duties on wool.

Whereas the ordinary resources of the general government having become greatly diminished in consequence of the rebellion, compelling a resort to heavy duties upon all articles of foreign production used and consumed by our people; and whereas woollen fabrics and articles of necessity consumed by those engaged in agriculture have been heavily burdened under the Morrill and other tariffs, and a further increase of duties being contemplated by the present Congress, and a tariff upon foreign wool, which comes in competition with our own production, having been almost wholly neglected or forgotten: Therefore—

Resolved, That our senators and representatives be instructed to urge upon Congress the just claims of our farmers to an equal protection with other branches of the industry of the country, by adjusting the tariff in such a manner that as high a rate of protection shall be afforded to wool and agricultural products generally as other productions and pursuits may receive under the present or any future tariff.

Resolved, That the governor be requested to forward a copy of these resolutions to each of our members of Congress and to the governors of the several States, with a request that they be recommended by the several executives to the legislatures of their respective States.

IN THE HOUSE OF REPRESENTATIVES,
February 28, 1862.

Read and passed.

G. P. SEWALL,
Speaker, pro tem.

IN SENATE, February 28, 1862.

Read and passed.

J. H. GOODENOW, *President.*

MARCH 1, 1862.

Approved.

ISRAEL WASHBURN, Jr.

STATE OF MAINE.

OFFICE OF SECRETARY OF STATE,
Augusta, March 3, 1862.

I hereby certify that the foregoing is a true copy of the original as deposited in this office.

JOSEPH B. HALL,
Secretary of State.

STATIONERY FURNISHED COMMITTEES.

LETTER

FROM

THE POSTMASTER OF THE HOUSE,

IN ANSWER TO

A resolution of the House of the 14th instant, furnishing a statement of the amount of stationery furnished and charged to the committees, respectively.

MARCH 21, 1862.—Laid on the table, and ordered to be printed.

Hon. G. A. GROW, *Speaker of the House of Representatives.*

SIR: I herewith transmit to the House a statement of the "amount of stationery furnished and charged to the committees, respectively," as called for by resolution of Hon. F. A. Conkling, adopted March 14, 1862, and which has been furnished under the authority of a resolution of the House passed March 5, 1842, as follows:

"Resolved, That the postmaster be further authorized to deliver, for the use of the several committees of the House, such stationery as may be required for that purpose by the respective chairman of such committees; keeping a true and accurate account of the quantity and cost of all so delivered. The postmaster shall not be at liberty to furnish stationery for the use of any committee except to the acting chairman thereof or to his order, nor to any one, except to the members of the House and its officers."

AMOUNT OF STATIONERY FURNISHED—

Committee of Elections:

Amount of stationery furnished	\$56 76
--------------------------------------	---------

Committee of Ways and Means:

Amount of stationery furnished	73 25
--------------------------------------	-------

Amount furnished from stationery room by clerk	41 35
--	-------

	<u>\$114 60</u>
--	-----------------

Committee of Claims:

Amount furnished from post office	45 50
Amount furnished from stationery room	5 35
	<u>\$50 85</u>

Committee on Commerce:

Amount furnished by postmaster	\$31 42
	<u> </u>

Committee on the Pacific Railroad:

Amount furnished by clerk from stationery room	\$2 81
	<u> </u>

Committee on Public Lands:

Amount furnished from post office	\$18 45
	<u> </u>

Committee on the Post Office and Post Roads:

Amount furnished from post office	\$39 05
	<u> </u>

Committee for the District of Columbia:

Amount furnished from post office	\$33 66
	<u> </u>

Committee on the Judiciary:

Amount furnished from post office	65 25
Amount furnished from stationery room by clerk	7 71
	<u>\$72 96</u>

Committee on Revolutionary Claims:

Amount furnished from post office	\$63 84
	<u> </u>

Committee on Public Expenditures:

Amount furnished from post office	\$18 52
	<u> </u>

Committee on Private Land Claims:

Amount furnished from post office	\$44 77
	<u> </u>

Committee on Agriculture:

Amount furnished by clerk from stationery room	\$21 19
	<u> </u>

Committee on Indian Affairs:

Amount furnished from post office	\$31 89
	<u> </u>

Committee on Military Affairs:

Amount furnished from post office	500 89
Amount furnished from stationery room by clerk	143 21
	<u>\$644 10</u>

Committee on the Militia:

Amount furnished from post office	\$22 51
	<u> </u>

Committee on Naval Affairs:

Amount furnished from post office	\$30 40
	<u> </u>

Committee on Foreign Affairs:

Amount furnished from post office	\$48 18
	<u> </u>

Committee on the Territories:

Amount furnished from post office	2 80
Amount furnished from stationery room	28 15
	<u>\$30 95</u>

Committee on Revolutionary Pensions:

Amount furnished by post office	19 60
Amount furnished from stationery room by clerk	30 05
	<u>\$49 65</u>

Committee on Invalid Pensions:

Amount furnished from post office	3 56
Amount furnished from stationery room by clerk	52 10
	<u>\$55 66</u>

Committee on Roads and Canals:

Amount furnished from post office	\$61 18
	<u> </u>

Committee on Patents:

Amount furnished from the post office	\$37 57
	<u> </u>

Committee on Public Buildings and Grounds:

Amount furnished from post office	\$25 53
	<u> </u>

Committee on Mileage:

Amount furnished from post office	\$14 57
	<u> </u>

Committee on Accounts:

Amount furnished from post office	33 87
Amount furnished from stationery room	45 79
	\$79 66

Joint Committee on Printing:

Amount furnished from post office	\$19 95

Joint Committee on Enrolled Bills:

Amount furnished from post office	\$15 26

Committee on Contracts for Government Supplies:

Amount furnished from post office	\$17 73

Committee on Loyalty of Government Employés:

Amount furnished from post office	55 55
Amount furnished from stationery room	35 59
	\$91 14

Committee on Establishment of National Armory:

Amount furnished from post office	11 52
Amount furnished from stationery room by clerk	4 47
	\$15 99

Special Committee on Western Defences:

Amount furnished from post office	\$15 62

In explanation of the large amount of stationery charged to the Committee on Military Affairs, I have to state that the larger part thereof was furnished to soldiers of the army at the request of members of the House, and upon the order of the chairman of said committee.

Very respectfully,

WM. S. KING,
Postmaster House of Representatives.

EXECUTION OF LEADING REBELS.

JOINT RESOLUTIONS

OF THE

OHIO LEGISLATURE,

EXPRESSIVE

Of their views as to the treatment of the leading rebels.

MARCH 24, 1862.—Laid on the table, and ordered to be printed.

JOINT RESOLUTION relative to the execution of leading rebels.

Whereas wicked and ambitious traitors have, without cause, plunged our nation into civil war, disregarding all fraternal obligations, falsifying the most sacred injunctions that can be applied to the conscience—their solemn oaths; forcing upon us an expense of millions of money and incalculable loss in the prostration of business, and untold miseries in the sacrifice of human life; and

Whereas recent developments manifest a disposition on the part of some of the leaders of the rebellion to ask terms and sue for peace: therefore, be it

Resolved, by the general assembly of the State of Ohio, That, in view of the loss of loyal blood and treasure, our government cannot, without loss of character and injustice to the noble dead that have fallen in defence of its authority and the rights of humanity, accept less than an unconditional submission to the supremacy of the Constitution and the laws.

Resolved, That the future peace of the United States and the permanency of the government, as well as the best interests of humanity throughout the world, demand the speedy trial and summary execution of all leading conspirators in the attempt to destroy the government; and in the name of the people of Ohio, who have given their money and lives without stint for the preservation of our liberties, we protest against the entertainment of any proposition for settlement other than unconditional submission to rightful authority and the condign punishment of the authors of the rebellion.

Resolved, That the governor be requested to transmit a copy of the foregoing to the President and to each member of the cabinet, and to each of our senators and representatives in Congress.

JAMES R. HUBBELL,

Speaker of the House of Representatives.

B. STANTON,

President of the Senate.

MARCH 14, 1862.

DEFENCE OF THE STATES OF NEW JERSEY, PENNSYLVANIA AND DELAWARE.

JOINT RESOLUTIONS

OF THE

LEGISLATURE OF NEW JERSEY,

RELATIVE TO

The defences of the States of New Jersey, Pennsylvania, and Delaware.

MARCH 24, 1862.—Referred to the committee on Military Affairs, and ordered to be printed.

OFFICE OF THE SECRETARY OF STATE,
STATE OF NEW JERSEY, *Trenton, March 20, 1862.*

SIR: I have the honor to transmit herewith a copy of resolutions adopted by the legislature of this State, agreeably to the requirements of said resolutions.

Most respectfully, your obedient servant,

W. S. JOHNSON,
Secretary of State.

Hon. JOHN T. NIXON,
Washington, D. C.

STATE OF NEW JERSEY.

JOINT RESOLUTIONS relative to the defences of the State of New Jersey, Pennsylvania and Delaware.

1. *Be it resolved by the senate and general assembly of the State of New Jersey,* That the government of the United States be, and it is hereby, earnestly requested to immediately provide suitable and sufficient defences for the Delaware river and bay and the harbors thereof, by the construction of gunboats and other improved means of defence.

2. *Resolved,* That, if necessary to enable the government of the United States to enter upon and complete the said work immediately, Congress be requested to authorize a special loan for that purpose, and that this State will unite with the States of Pennsylvania and Delaware in taking the whole of said loan, in the following propor-

tions, to wit: the State of Pennsylvania to take twenty-four parts thereof, the State of New Jersey to take five parts thereof, and the State of Delaware the residue, being in the proportion of the representation of said States in the House of Representatives of the United States.

3. *Resolved*, That the senators and representatives of this State in the Congress of the United States be, and they are hereby, requested to press this subject earnestly and immediately upon the attention of the Congress and Executive of the United States, and that a copy of these resolutions be sent to each of the said senators and representatives, to the President of the United States, to the presiding officers of the senate and house of representatives of the State of Pennsylvania, and to the governor of the State of Delaware.

RELATIVE TO

SENATE OF NEW JERSEY, *March 20, 1862.*

This bill having been three times read and compared in the senate, resolved, that the same do pass.

By order of the senate.

JOS. T. CROWELL,
President of the Senate.

NEW JERSEY HOUSE OF ASSEMBLY, *March 20, 1862.*

These joint resolutions having been three times read and compared in the house of assembly, ordered, that the same do pass.

By order of the house.

CHAS. HAIGHT,
Speaker of the House of Assembly.

Approved March 20, 1862.

CHAS. S. OLDEN, *Governor.*

STATE OF NEW JERSEY.

I, Whitfield S. Johnson, secretary of state of the State of New Jersey, do hereby certify the foregoing to be a true copy of resolutions passed by the legislature of this State, and approved by the governor, this 20th day of March, A. D. 1862, as taken from and compared with the original, now on file in my office.

In testimony whereof I have hereunto set my hand and affixed the seal of my said office, at Trenton, this twenty-first day of March, [L. s.] one thousand eight hundred and sixty-two, and of the independence of the United States the eighty-sixth.

W. S. JOHNSON,
Secretary of State.

APPROVAL OF THE ADMINISTRATION OF ABRAHAM
LINCOLN IN THE CONDUCT OF THE WAR.

RESOLUTIONS

OF THE

LEGISLATURE OF THE STATE OF MAINE,

APPROVING

The administration of Abraham Lincoln in the conduct of the war.

MARCH 24, 1862.—Laid on the table and ordered to be printed.

STATE OF MAINE.

RESOLVES relating to national affairs.

Resolved, That we cordially indorse the administration of Abraham Lincoln in the conduct of the war against the wicked and unnatural enemies of the republic, and that in all its measures calculated to crush this rebellion speedily and finally the administration is entitled to, and will receive, the unwavering support of the loyal people of Maine.

Resolved, That it is the duty of Congress, by such means as will not jeopard the rights and safety of the loyal people of the south, to provide for the confiscation of estates, real and personal, of rebels, and for the forfeiture and liberation of every slave claimed by any person who shall continue in arms against the authority of the United States, or who shall in any manner aid and abet the present wicked and unjustifiable rebellion.

Resolved, That in this perilous crisis of the country it is the duty of Congress, in the exercise of its constitutional power, to "raise and support armies," to provide by law for accepting the services of able-bodied men of whatever status, and to employ them in such manner as military necessity and the safety of the republic may demand.

Resolved, That a copy of these resolutions be sent to the senators and representatives in Congress from this State, and that they be respectfully requested to use all honorable means to secure the passage of acts embodying their spirit and substance.

IN THE HOUSE OF REPRESENTATIVES, *March 14, 1862.*

Read and passed.

J. G. BLAINE, *Speaker.*

IN SENATE, *March 15, 1862.*

Read and passed.

JOHN H. GOODENOW, *President.*

March 15, 1862.

Approved.

ISRAEL WASHBURN, JR.

STATE OF MAINE.

OFFICE OF SECRETARY OF STATE,
Augusta, March 15, 1862.

I hereby certify that the foregoing is a true copy of the original as deposited in this office.

JOSEPH B. HALL,
Secretary of State.

ILLINOIS AND MICHIGAN CANAL.

RESOLUTIONS

OF THE

ILLINOIS CONSTITUTIONAL CONVENTION,

IN REGARD TO

*The enlargement of the Illinois and Michigan canal and the improvement
of the Illinois river.*

APRIL 1, 1862.—Referred to the Committee on Military Affairs, and ordered to be printed.

STATE OF ILLINOIS.

CONSTITUTIONAL CONVENTION,
Springfield, March 17, 1862.

PREAMBLE AND RESOLUTIONS.

Whereas the Committee on Military Affairs of the House of Representatives of the Congress of the United States have made a report in favor of the enlargement of the Illinois and Michigan canal, and the improvement of the Illinois river, so as to allow steamboats and vessels-of-war to pass from the Mississippi river to Lake Michigan, and have introduced a bill to carry into effect their recommendation; and whereas this improvement is not only a work of national importance but one in which the State of Illinois is directly interested: Therefore, be it—

Resolved, That in the judgment of this convention the improvement contemplated would not only be of great utility to the State of Illinois, but of paramount importance in time of war, either foreign or domestic, to the defence and preservation of the Union; and that this State will co-operate with the general government in any plan for its speedy construction.

Resolved, That the secretary of this convention be instructed to forward to the President of the United States, and to each of our senators and representatives in Congress, a copy of the foregoing preamble and resolutions.

STATE OF ILLINOIS,

Constitutional Convention:

I, Wm. M. Springer, secretary of the constitutional convention, do hereby certify the foregoing to be a true copy of "preamble and resolutions" adopted by the convention, March 17, 1862, as appears from my official record.

Witness my hand this 18th day of March, A. D. 1862.

W. M. SPRINGER,
Secretary of the Convention.

ADMISSION OF CANDIDATES TO THE NAVAL ACADEMY.

LETTER

FROM

CAPTAIN ANDREW A. HARWOOD,

IN RELATION TO

The admission of pupils at the Naval Academy.

APRIL 3, 1862.—Referred to the Committee on Naval Affairs, and ordered to be printed.

BUREAU OF ORDNANCE AND HYDROGRAPHY, NAVY DEPARTMENT,
Washington City, March 12, 1862.

SIR: I have received your letter of yesterday in relation to the admission of pupils at the Naval Academy, and have referred a copy of it to Captain Blake, with instructions to lay the subject before the academic board.

The gentlemen composing that board are particularly interested in everything relating to the academy; and its general welfare being, so to speak, a sort of speciality with them, I hope to receive shortly, the best practical information upon the several points mentioned in your letter, upon receipt of which I will, without delay, communicate the views of the board, together with my own, for your consideration.

I have the honor to be, very respectfully, your obedient servant,

AND'W A. HARWOOD,
Captain and Chief of Bureau, U. S. N.

Hon. C. B. SEDGWICK,
House of Representatives.

BUREAU OF ORDNANCE AND HYDROGRAPHY, NAVY DEPARTMENT,
Washington City, March 21, 1862.

SIR: Herewith I have the honor to transmit the reply to your inquiry relative to the admission of candidates to the Naval Academy, which was referred by me to the academic board.

I know the gentlemen composing this board have the best interests

of the service at heart; that they have the best means of comprehending and weighing all matters connected with the academy, and my candid opinion is that they have judged wisely in the matter proposed to them to decide.

Permit me to add that, under the present system of appointment, hardly fifty per cent. of the naval cadets graduate. This is because no care is taken in selecting, *at first*, pupils who have the rudiments of education, either intellectual or moral. This system is very wasteful of time and money and deplorably ineffectual, as it does not supply the required number of educated officers. It is certainly an argument in favor of your proposition, that paying cadets would be admonished by their friends that they would have to retire or get the worth of their money.

I beg your serious attention to an abuse which is really without excuse. Ungovernable, ignorant, and idle boys are frequently appointed, and after every inducement has been lavished on them to reform and study to pass their examination, they recklessly throw away the opportunity, and are, as a matter of course, expelled or permitted to resign. These very individuals are sometimes renominated by representatives, and if renominated, must, under the present rule, be readmitted. I hope the power to reappoint, after the nominee has once been rejected for cause, will be taken away.

If you will use your influence to have the proposition made by yourself and those which are herewith presented to you tried for a year or two, the statistics of the academy will prove, beyond a doubt, their wisdom or the reverse. The trial will also develop such modifications as will, in time, make the academy what it ought to be, and what it would have been already but for conflicting extraneous interests, very powerful, but essentially unpatriotic and selfish.

With great respect, your obedient servant,

AND'W HARWOOD,

Captain and Chief of Bureau, U. S. N.

HON. CHARLES B. SEDGWICK,

Chairman of Committee on Naval Affairs,

House of Representatives.

From the proceedings of the Academic Board.

NAVAL ACADEMY, *March 18, 1862.*

The committee, consisting of Lieutenant Simpson, Professor Coffin, and Professor Nourse, made a report on subjects referred to them, which was adopted by the board, as follows:

The committee of the academic board, to whom was referred the letter of the chief of the bureau, accompanying a letter from the Hon. C. B. Sedgwick, propounding two questions upon which answers are desired for the information of the naval committee of the House of Representatives, report that the first question "whether any

practicable plan can be devised for selecting cadets from the public schools, and the selection be confined to such schools, and whether, if practicable, such mode of selection would be just and equitable," introduces a subject which is of vital importance to the success and maintenance of the Naval Academy, and, as such, will be treated at length.

It has long been apparent to the board that the present system of appointing cadets to the academy, without care in the selection, was undermining the very existence of the institution. The great complaint made by the enemies of the academy has been that it could only supply the ordinary vacancies made in the lists from year to year by deaths and resignations, and that in cases of emergency no hope could be entertained of obtaining a supply of officers through the slow formalities of the academy. It is impossible to deny this, for the records of the academy show that scarcely more than one-fourth of those admitted have graduated.

But the fault-finders do not take the trouble to investigate the cause of this result, satisfying themselves with the easily arrived at conclusion that the course is too severe, and that we had better go back to the old system.

Now, the board are, and always have been, unanimous that the course of instruction laid out for education at this academy is not too severe, but that every part of it is indispensable to the proper cultivation of an educated officer. The fault does not lie with the academy; other causes have had their influence, but the fault, in a great measure, lies with the appointing power, which has not kept the academy supplied with the proper material.

The academic board has been powerless to introduce a remedy for this evil; it has done all that it could do in recommending that a higher standard of proficiency should be required at the entering examination; but even this recommendation (though adopted as their own by two boards of visitors) has never been acted upon. The letter of the Hon. Mr. Sedgwick offers the first cheering prospect that a step in the right direction may be taken by Congress.

In reply to the question of the chairman of the naval committee relating to public schools, the committee is of opinion that it would not be expedient to confine the appointments to such schools, as this would necessarily exclude from the navy all youths who did not attend such schools, among whom would be found many young men who would, no doubt, do credit to the service and to the country, and of whom, as being the representatives of the more wealthy class of citizens, it would be desirable to have a certain proportion in the service, in which, as far as practicable, it would be an advantage to have representatives from all classes in society.

Again: to limit the appointments to public schools would be to exclude altogether representatives from districts where the public school system does not obtain.

Although reporting against limiting the appointments to the public schools, the committee is in favor of holding out inducements to students at the public schools, and would suggest, as one mode, that

a member of Congress having a nomination in the district where the public school system obtains may send two candidates to the academy—one from the public school, and one selected by suitable examination held in the district of applicants who do not attend the public schools, and that it shall be left to the academic board to decide which of the two shall receive the appointment to the academy.

But, especially in those districts where there are no public schools, the committee recommends, as the plan which presents the greatest advantages, that an examination should be held of all candidates for the nomination, and that the most competent youth should be selected, as it is only by taking this precaution that the best material can be procured; and if this care in appointing is taken, it is but natural to suppose that the list of deficiencies at the examinations will diminish, and that the number of graduates will increase. The navy will be benefited by the acquisition of the best intellect in the several districts, and the increased proportion of graduates will obviate the most serious objections heretofore raised against an institution which, if properly supported, will prove itself one of the most important bulwarks to the country.

The manner of conducting the examinations proposed in the different districts will have to be determined by peculiar considerations in each district; but it is believed by the committee that an approach to the French system might be adopted with advantage, by appointing (during the period necessary to conduct the examinations) a government examiner for several neighboring districts, who, acting under the order of the member of Congress or Secretary of the Navy, shall conduct his examinations under such instructions as, emanating from the academic board, may be approved by the Navy Department.

The committee finds an illustration of this plan in the action of the Hon. John Hutchins, member of Congress from the twentieth congressional district of the State of Ohio, an extract from whose circular on this subject is here annexed:

“By a recent order of the Navy Department candidates for appointment to the Naval Academy are required to report at Newport, Rhode Island, between the 10th and 20th of April next, instead of next September, the usual time. There is a vacancy in the twentieth congressional district. That I may be able to nominate one *well qualified*, I have concluded to have the candidates examined at Warren on the 8th of April next, and the young man found the best qualified in all respects shall receive the nomination. I have requested the Rev. James Marvin, of Trumbull county; Prof. Hine, of Mahoning county, and the Hon. D. Cadwell, of Ashtabula county, to act as literary examiners, and Drs. D. B. Wood and J. Harmon, of Warren, as medical examiners. Candidates will file with the examiners written testimonials of good character and *habits*.

* * * * *

“All candidates who wish to apply for admission to the naval school will report themselves at Warren on the 8th day of April next.

“JOHN HUTCHINS.”

The committee recommends that the attention of the naval committees in Congress be solicited to this circular of the honorable Mr. Hutchins as, in itself, rendering a satisfactory solution of the problem of appointing candidates to this academy.

The second question of the chairman of the naval committee of the House introduces a plan for admitting paying scholars to the academy, and for filling the classes from such paying class on the failure of those appointed on the recommendation of members of Congress.

This plan presents several advantages, viz :

1st. The number of students would be increased with but little additional expense to the government. The paying scholars would be available for filling vacancies of appointed cadets occasioned by dismissals or resignations, and thus each graduating class would be kept filled to the number originally appointed, which advantage of the plan would be especially apparent in case the suggestions made in the reply to the first question proposed above should not be favorably received by Congress.

2d. A graduating class, in case of emergency, might be enlarged by appointment to it of all of the paying class sufficiently advanced in the academic course.

3d. Good material for the service would be secured, viz: those who have a taste and desire for sea life, as well as the ability and willingness to study; none others would be likely to incur the expense of such an education.

4th. Paying scholars who might graduate from the academy, without having received an appointment from the Navy Department, would prove of great service to the country at large by embarking in the merchant marine, in which their services would, no doubt, be eagerly sought; and they would form a most useful reserve for the navy should the government, in time of war, find itself forced to call for volunteer officers. Recent events demonstrate the necessity for such a corps.

5th. An incentive to those who make appointments to select the best prepared and most promising applicant, lest the failure of one appointed should vacate a place to be filled by one of the paying class.

The following disadvantages present themselves to the committee, viz :

1st. The character of the academy, as a government institution, may be compromised by admitting, on such a footing, a class of students who must necessarily belong to wealthy families, and the consequent attacks that will be made upon it in case many are advanced to the regular service.

2d. The serious danger to the harmony and discipline of the institution, arising from having in the same class two bodies of students standing on such a different footing.

3d. Attempts, direct or indirect, on the part of the parents of the paying scholars to interfere with the institution.

This subject is one so entirely new, and as many disadvantages might become apparent in practice which do not present themselves

on a previous consideration of the subject, that the committee hesitates to pronounce an opinion decidedly in favor of the plan, and presents simply the arguments for and against it.

If, however, the plan should be adopted, and should work well, the navy would gain much ; if, on the contrary, it should be adopted and should be found to be defective in practice, it could, no doubt, be easily repealed by the same power which established it.

In concluding this report, the committee suggests to the board that, while Congress seems disposed to advance the interests of the academy, the opportunity should not be lost of reminding the naval committee that nothing is at this time more essential to the academy than that it should be provided with a permanent location, without which justice cannot be done to the country, to its own reputation, or to the students under instruction.

The committee also recommends that, as the school-ship system has proved so successful in its effect, it should be still further elaborated, by attaching to the academy another frigate,* or first class sloop-of-war, having a light spar deck, in order to accommodate afloat a larger number of the students, as it is believed that it will have the effect of raising the tone of study, thus increasing the number of graduates.

Copied from the records of the academic board.

J. H. C. COFFIN, *Secretary.*

* No legislation is necessary with regard to supplying another ship, and owing to the comparative unimportance of sailing ships at present, there will be no objection to attaching another vessel for the use of the academy. It has been the intention of the department so to do.

ANDREW A. HARWOOD,
Chief of Bureau of Ordnance and Hydrography.

It is a well-known fact that the American people are becoming more and more interested in the health of their children. This interest is not only manifested in the purchase of healthful food and the wearing of comfortable shoes, but also in the desire to have their children receive the best possible medical care. It is for this reason that the American Medical Association has taken the initiative in the establishment of the American Academy of Pediatrics.

The American Academy of Pediatrics is a voluntary association of pediatricians and other medical men who are interested in the health of children. It was organized in 1903 and has since that time been working for the improvement of the medical care of children. The Academy has published a journal, the *Pediatrics*, which is one of the most important sources of information for the pediatrician. It has also held many conferences and has been instrumental in the establishment of many hospitals and clinics for the care of children.

The Academy is now working for the improvement of the medical care of children in many other ways. It is holding conferences and publishing journals in many other countries. It is also working for the improvement of the medical care of children in the United States. It is for this reason that the American Medical Association has taken the initiative in the establishment of the American Academy of Pediatrics.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
PUBLISHED WEEKLY
CHICAGO, ILL., MAY 1, 1919. Vol. 17, No. 18

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RAILROAD COMMUNICATION BETWEEN NEW YORK AND WASHINGTON CITY.

[To accompany bill H. R. No. 396.]

PROPOSITION

OF THE

METROPOLITAN RAILROAD COMPANY

TO

*Build the Metropolitan railroad, making direct communication between
Washington city and New York.*

APRIL 10, 1862.—Ordered to be printed.

METROPOLITAN RAILROAD COMPANY OFFICE,
Washington, November 13, 1861.

To the Congress of the United States :

The Metropolitan Railroad Company, chartered by the Congress of the United States and by the legislature of Maryland to construct, own, and use a railroad from Georgetown to Hagerstown, intersecting the Baltimore and Ohio railroad near the Point of Rocks, and with authority to connect any part of said road with any other road or roads in the State of Maryland, make the following proposals to the government of the United States, namely:

1st. To construct a portion of the main stem of their road from Georgetown to Gaithersburg, and as much further west as the government may require, and to connect the same with the Philadelphia and Wilmington road, the Northern Central road, or any other railroad which may be constructed terminating at or near Baltimore, so as to form direct through and unbroken lines of railroad, *via* Baltimore and Philadelphia, to New York, as also to form connexions through Pennsylvania to New York and westward to Ohio, Indiana, and all the States of the west, southwest, and northwest. The said road to be completed in ninety working days from the time the material and necessary working force shall be collected on the route, provided this proposal is at once favorably acted upon.

2d. To place this indispensable line at the disposal of the government as a reliable means of transport for troops, munitions, military supplies, mails, &c., during the continuance of the war.

3d. To extend the said line from Georgetown through the city of Washington, by such streets and avenues as shall afford to the government the readiest and most reliable means of transport from the depots to all the public buildings, to the navy yard, and to the wharves upon the Potomac and upon the East branch.

Before stating the terms upon which these proposals are based, it will be well to examine the actual and pressing necessity which exists for the earliest possible uses of these roads, and to show the saving which will enure to the government by their construction.

The capital of a great country, situated near its centre, has suddenly, by a wide-spread rebellion, been forced into the position of a frontier city—threatened with capture and destruction.

Relieved from this for the present by a patriotic outpouring of the people from the north and west, who now cluster around for its defence, this capital city, its citizens and protectors, are dependent for subsistence, for re-enforcements, and substantial means of support of every nature, upon a single stem of railroad ascertained to be wholly inadequate even at a temperate period of the year, when transportation is easy, but which may, if the coming winter prove severe, be interrupted as it has been in former times, and a recurrence of such interruption at this period, even for a single day, might prove so disastrous as to peril if not lose the entire city. No seat of government in the civilized world is thus so *nearly isolated* from its sources of reliance. London has *ten railroads* extending outward as means of support and military protection. Paris has *seven*, Vienna *four*, Berlin *five*. Washington, more dependent than either of these upon the distant surrounding country, has but one, and that one already so much crowded with traffic that it is unavailable for any increased demands, or for the regular and prompt transport of passengers and mails. The single water approach to the city is now interrupted by rebel batteries, and if these were silenced, the period of *ice* is to occur which may be equally, if not more effective in preventing its use for military or other purposes. Wisdom, imperative necessity, the maintenance of a government, the integrity of the country, the support of the troops, alike demand that early steps should be taken to afford all the necessary means of connecting the capital with the nation at large in such reliable manner that the government may be respected, and protected by the people who have intrusted its welfare to the hands of the present administration. We have seen, in a war of invasion by a foreign foe, our capital destroyed because there was no ready means by which a protecting force could be thrown into it. In a rebellion, we have seen *the single* means of ready approach so interrupted as to delay relief, endanger the capital, and strike a panic into the heart of the country. Had there been two or three good railroads from the west and north into Washington, troops and munitions would have poured in so rapidly as to have driven the rebellion backward in its earliest stage—the

disasters of Bull Run could not have occurred, and the millions of dollars thereby lost would still be a resource to the treasury. Full, complete, and permanent protection to the capital is not a necessity of *this war only*—it is a duty in all time which the government owes to the people; and not the cost of one, but of a dozen or more roads would be justified in its fulfilment, even if that cost came directly from the government treasury. The capital is within thirty miles of the broad Chesapeake, the waters of which are as open to the iron-clad steamers of a foreign foe as is the Atlantic highway; and this renders the duty still more imperative to construct in time those interior railroads reaching west and north over which ample protective force may be borne to resist and punish any and every foe. The present proposal contemplates no expense to the nation, while it offers two additional means for its use—the one to be constructed immediately, the other whenever required; the first will prove a measure of vast economy during the continuance of the war, and a great postal and passenger convenience thereafter.

That the acceptance of the proposals, and the construction and use of the road under them, will husband the resources of government, may be shown by the following facts:

The charter of the Metropolitan Railroad Company limits their maximum charge, on transportation of freight of any kind, to four cents per ton per mile.

The charge of the existing road to the government is five cents per ton per mile on heavy, and eight and a half cents on light freight, averaging six and a half cents per ton per mile.

The Metropolitan road is limited for passenger charge, as its maximum, at three cents per head per mile, while its minimum or charge to the government will be but two cents per head per mile.

The existing road claims nearly four cents per mile for passengers to Baltimore, and four and a half cents per mile on *through passengers* to Philadelphia and New York.

The Metropolitan road to Baltimore, and the existing road to Baltimore, are of about equal lengths, or forty miles.

The Washington road to Baltimore has claimed per head for troops from the government \$1 50.

The Metropolitan road will carry them at two cents per mile, or for the distance, eighty cents, making a saving to the government of seventy cents on each person.

The average number of troops transported for government for the last four months has been 44,000 per month, which, at seventy cents saving on each, will be saved per month \$30,800.

The average charge for transportation of freight for government, over the Washington Branch road, is about six and a half cents per ton per mile, or for the whole distance \$2 60.

The charter limit for charge by the Metropolitan road is four cents per mile, or, for whole distance, \$1 60, making a saving per ton of \$1 to the government on every ton to and from Baltimore.

The average transportation for the government is now 30,000 tons

per month. The saving, then, to the government on freight per month by the Metropolitan road would be \$30,000.

From the railroad depot to the wharves, and through the city, the government now employs five hundred wagons, two thousand horses, five hundred teamsters, and fifty wagon-masters daily, in transporting stores, munitions, &c. And as the streets are not paved, this transportation will become more difficult and costly when they are cut up and deep in mud. Each wagon, including wear and tear, subsistence and wages, costs per day \$4 70, or a total expenditure per month of \$72,500 for the internal city transportation. By the construction of branch city lines, as proposed, three-fourths of this heavy expenditure may be saved, as the Metropolitan road will permit the distributing transport free of charge over their roads, as will be subsequently shown.

The total saving, then, to the government will be as follows:

On transportation of troops, per month, as shown	\$30,800
On freight, per month, from Baltimore	30,000
On freight over city branches, three-fourths of the wagon expenses daily saved	54,375
Or a total saving per month to the government of the United States of	115,176

Should the war continue two years, and the average of transportation be maintained throughout, this saving will amount in that time to *two millions seven hundred and sixty-three thousand dollars*.

Important as this great ratio of saving is, it is not the only consideration which attaches to this new road and its branches. A direct and cheaper means would be afforded for supplies of fuel and provisions for the citizens of Washington, which would greatly reduce the cost of living and add to their convenience and comfort. The trade of the city would be stimulated, and its population would increase. Its real estate would enhance in value, increase in quantity, until its taxation would provide all the expenditure necessary to pave and sewer the avenues and streets, rendering it one of the most desirable of cities for health and convenience in the country.

It is believed essential to the welfare of the city and to the armies of the government that these roads should be constructed. It has been shown by facts and figures, derived from the best of sources, that a vast saving will be made to the government at the rate of one million three hundred and eighty-one thousand five hundred dollars per year during the continuance of the war; and hence it must be apparent that it is absolutely necessary to commence the work at the earliest practicable time, that it may be completed to serve and save in time of greatest need. The branch roads through the city should be finished before the early thaw of the spring, to save the streets from being entirely cut up by the heavy transportation wagons.

The engineer's estimates are, that the main line will cost \$51,000

per mile. This is \$10,000 per mile less than the Baltimore and Ohio railroad cost. It is possible that it may exceed the estimate, but the company will complete and thoroughly equip the work upon the following terms:

1. The government of the United States to advance and pay as the road progresses, and as the amounts are required upon the estimates of the engineers, the credit of the government or its guarantee upon the company's bonds and coupons, or the six per cent. bonds of the United States, having thirty years to run, to the amount of two millions of dollars. The disbursements to be made by such agent as the government may appoint for that purpose, or upon an examination and certification of such agent that the said amounts are necessary for disbursement; the said sum to be distributed per mile for construction and equipment.

2. This advance to be secured by a mortgage of the road and property of the company to trustees in the usual form for mortgage bonds, and the said mortgage to provide that the Metropolitan Railroad Company shall pay the interests for the coupons semi-annually into the treasury of the United States as the same shall become due, and that they shall set aside and appropriate from their earnings, from year to year, such amount per cent. per annum as will, within the said thirty years, extinguish the amount of the bonds or of the advance.

The amount so set aside in each year to be paid into the United States treasury, and when so paid to cancel an equal amount of the indebtedness and the interest thereon.

3. In consideration of this advance, the said Metropolitan Railroad Company to be bound at all times during the said thirty years to transport the munitions and stores of the government at a price not exceeding four cents per ton per mile for subsistence and military stores, and at not exceeding two cents per mile for all troops, seamen, and other persons employed by or under orders of the government, and to permit the transport of all the said stores, munitions, and forage of the government in bulk in the cars, as they arrive, over the city branch and connecting roads at all times and perpetually, free of cost or charge for the use of said city roads. The said city branches to remain during the continuance of the main line of road, and the company to have the right to construct and lay down such additional tracks in the streets as may be required by the government or further convenience of the people of Washington and Georgetown to transport passengers and property.

Should the proposals herein made be accepted, the Metropolitan Railroad Company will immediately commence the work and prosecute it with the utmost energy to completion.

Three different routes for the road to pursue to Baltimore have been examined, and it has been ascertained that the best and easiest grade is to the eastward of the present line, and that it will run within ten miles of Annapolis, lengthening the route one and a half miles to Baltimore, and shortening the distance from Washington to Annapolis eleven miles. This is a most important route for the gov-

ernment, as it will afford the cheapest mode of conveying all materials, troops, &c., to the capital that can be devised.

To the navy it is not less important than to the army, as, by the connexion with the roads and canals reaching directly into the coal districts of Pennsylvania and Maryland, coal for naval purposes may be delivered at Annapolis at nearly the same price as that delivered at Philadelphia and New York, and thus a depot may be formed for its supply to naval vessels more economically, more accessible, and better adapted than any other point of the Atlantic coast.

The construction of the Metropolitan road will open up *five* new lines through to New York. It is therefore invaluable to the country as a mail and military facility. These routes are—

1. By the Point of Rocks, Hagerstown, Chambersburg, Harrisburg, and Easton, to New York. Distance 319 miles.
2. By Baltimore, York, Harrisburg, Allentown, and Easton, to New York. Distance 307 “
3. By Baltimore, Columbia, Reading, Allentown, and Easton, to New York. Distance 282 “
4. By Baltimore; thence by Baltimore Central road to Philadelphia; thence on west part of Philadelphia to Frankford, and by Trenton railroad to New York. Distance 217 “

5. By Baltimore to Christiana; thence by Pennsylvania Central road, and on to Norristown and Lambertville, connecting thence with New Jersey Central or Camden and Amboy or New Jersey road, each connexion making nearly the same distance, 213 miles.

And by the existing road from Baltimore to Philadelphia, and thence to New York. Distance, 228 miles.

Thus it will be seen that this one new road to Baltimore affords the most ample military protection to the capital, while it gives to the whole people of the United States a guarantee of safe and rapid conveyance by several routes, and places six (and competing) lines at their disposal, guarding them from oppressive monopoly, which either line might exert if existing singly. The first three routes named open up also nearly air-lines to the lakes, connecting with the Erie and New York roads westward, and with all the roads eastward through New England. All the lines will connect with the Baltimore and Ohio and the Pennsylvania Central road westward, and it is believed that the true interest of all the great roads now existing will be advanced by this one single road.

It will be but fair to pass a bill which shall make it obligatory on the company to form the connexions with other roads in such manner that trains may be run through without change to New York; that the price for through passengers on all the roads availing of this connexion shall not exceed two and a half cents per mile over the said lines, or five and a half dollars by the shortest line, when that is connected throughout its length to New York.

PACIFIC RAILROAD.

RESOLUTIONS

OF

THE LEGISLATURE OF MAINE,

IN RELATION TO

The People's Pacific Railroad Company.

April 21, 1862.—Laid on the table, and ordered to be printed.

STATE OF MAINE.

RESOLVE relating to the People's Pacific Railroad Company.

Resolved, That our senators in Congress be instructed and our representatives be requested, to use all honorable means to procure the passage of a bill through Congress granting land and the credit of the government to the People's Pacific Railroad Company, to aid in the construction of a railroad to the Pacific coast, unless some more feasible plan, in their judgment, shall be presented to Congress for the construction of the road.

Resolved, That the governor be requested to furnish a copy of the foregoing resolve to each of our senators and representatives in Congress.

IN THE HOUSE OF REPRESENTATIVES, *March 15, 1862.*

Read and passed.

J. G. BLAINE, *Speaker.*

IN SENATE, *March, 15, 1862.*

Read and passed.

J. H. GOODENOW, *President.*

STATE OF MAINE, OFFICE OF SECRETARY OF STATE,

Augusta, April 18, 1862.

I hereby certify that the foregoing is a true copy of the original as deposited in this office.

JOSEPH B. HALL,
Secretary of State.

THE HOUSE OF REPRESENTATIVES
OF THE STATE OF MAINE
IN SENATE

PACIFIC RAILROAD

REPORT OF THE COMMISSIONERS OF THE LAND OFFICE
IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE
MARCH 18, 1862

RESOLUTION

PASSED BY THE SENATE
MARCH 18, 1862

THE LEGISLATURE OF MAINE
IN SENATE

The People's Political Association

April 11, 1862 - Held on the table and ordered to be printed

April 11, 1862 - Held on the table and ordered to be printed

STATE OF MAINE

REPORT OF THE COMMISSIONERS OF THE LAND OFFICE

MAINE: PRINTED BY THE STATE OF MAINE, 1862.
The People's Political Association
April 11, 1862 - Held on the table and ordered to be printed
April 11, 1862 - Held on the table and ordered to be printed

IN THE HOUSE OF REPRESENTATIVES, MAY 14, 1862

REPORT OF THE COMMISSIONERS OF THE LAND OFFICE

MAINE: PRINTED BY THE STATE OF MAINE, 1862.

THE PEOPLE'S POLITICAL ASSOCIATION

APRIL 11, 1862 - HELD ON THE TABLE AND ORDERED TO BE PRINTED

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APPROVAL OF THE COURSE OF THE PRESIDENT OF THE
UNITED STATES.

RESOLUTIONS

OF

THE STATE OF WISCONSIN,

TENDERING

To the President of the United States approval for his course.

APRIL 21, 1862.—Laid on the table, and ordered to be printed.

A JOINT RESOLUTION tendering to the President of the United States approval for his course.

Resolved by the assembly, the senate concurring, That we tender to the President of the United States our unqualified approval of the manner in which he has administered the government from his inauguration to the present time—a period of difficulties, dangers, and vast and delicate responsibilities, without a parallel in the history of the nation; and that, as Wisconsin has given him her prompt support and her unlimited confidence in the past, so for the future, having undiminished faith in his ability, integrity, and patriotism, we pledge him our continued co-operation, and that of our State, in all such measures as he shall deem just and proper for the accomplishment of the great undertaking of his administration—the restoration of the authority of the Constitution and the supremacy of the laws of the United States in every State and Territory where they have been assailed or questioned.

Resolved, That the secretary of state be directed to transmit a copy of these resolutions to the President of the United States, and to each of our senators and representatives in Congress.

J. W. BEARDSLEY,

Speaker of the Assembly.

G. W. HAZELTON,

President of the Senate pro tempore.

Approved April 5, 1862.

LOUIS P. HARVEY

STATE OF WISCONSIN, *Secretary's Office*, ss:

The secretary of state of the State of Wisconsin hereby certifies that the foregoing joint resolution has been compared with the original enrolled joint resolution deposited in this office, and that the same is a true and correct copy thereof, and of the whole of such original.

In witness whereof, I have hereunto set my hand and affixed the
[L. S.] great seal of the State, at the capitol, in Madison, this 16th
day of April, A. D. 1862.

EDWARD ILSLEY,
Assistant Secretary of State.

SOLDIERS OF THE WAR OF 1812.

RESOLUTIONS

OF

THE LEGISLATURE OF NEW YORK,

IN RELATION TO

Advances to soldiers of that State who served in its defence during the war of 1812-'13-'14.

APRIL 23, 1862.—Laid on the table, and ordered to be printed.

STATE OF NEW YORK.

ASSEMBLY CHAMBER, *Albany*, April 19, 1862.

On motion of Mr. Dewey, the following preamble and resolutions were unanimously adopted :

Whereas there are on file in the comptroller's office of the State of New York, sundry claims of soldiers of the war of 1812-'13-'14, for clothing worn out in the service of the United States, for arms used and lost, and for equipments and unavoidable expenses in said war, a large proportion of which claims have been duly audited and revised by the proper authorities of this State : Now therefore, be it

Resolved, That the representatives of this State in both houses of Congress be requested to obtain, at the earliest possible day, an acknowledgment by the general government of its obligation to refund to this State any advances that it may make in payment of all just demands made by the soldiers of this State who served in its defence during the last war with Great Britain.

Resolved, That the clerk of this house transmit a copy of this preamble and resolution to each member of Congress from this State.

By order of the assembly :

J. B. CUSHMAN, *Clerk*.

SOLDIERS OF THE WAR OF 1812

RESOLUTIONS

OF

THE LEGISLATURE OF NEW YORK

IN RELATION TO

ADVANCE TO SOLDIERS OF THAT STATE WHO SERVED IN ITS DEFENSE DURING THE
WAR OF 1812-13-14.

Article 1st, 1817 - Laid on the table, and ordered to be printed.
Article 2d, 1817 - Laid on the table, and ordered to be printed.

STATE OF NEW YORK

Assembly Chamber, Albany, April 19, 1827.

On motion of Mr. Doolittle, the following preamble and resolutions were unanimously adopted: Whereas there are on file in the comptroller's office of the State of New York sundry claims of soldiers of the war of 1812-13-14, for clothing worn out in the service of the United States, for arms used and lost, and for equipments and unavoidable expenses incurred in said war, a large proportion of which claims have been duly audited and revised by the proper authorities of this State: Now therefore, be it Resolved, That the representatives of this State in both houses of Congress be requested to obtain, at the earliest possible day, an acknowledgment by the general government of its obligation to refund to this State any advances that it may make in payment of all just demands made by the soldiers of this State who served in its defense during the last war with Great Britain.

Resolved, That the clerk of this house transmit a copy of this preamble and resolution to each member of Congress from this State.
By order of the assembly:

J. N. CUSHMAN, Clerk.

REPUBLICS OF HAYTI AND LIBERIA.

RESOLUTIONS

OF

THE LEGISLATURE OF MAINE,

IN RELATION TO

The recognition of the republics of Hayti and Liberia.

APRIL 28, 1862.—Laid on the table, and ordered to be printed.

STATE OF MAINE.

RESOLVES relating to the recognition of the independence of the republics of Hayti and Liberia.

Resolved, That the recognition of the independence of the republics of Hayti and Liberia by the United States is due to the great commercial interests of the Union, and would be eminently appropriate.

Resolved, That the governor be requested to communicate copies of these resolutions to our senators and representatives in the Congress of the United States.

IN THE HOUSE OF REPRESENTATIVES,
February 14, 1862.

Read and passed.

J. G. BLAINE, *Speaker.*

IN SENATE, *February 14, 1862.*

Read and passed.

J. H. GOODENOW, *President.*

FEBRUARY 14, 1862.

Approved.

ISRAEL WASHBURN, JR.

STATE OF MAINE.

OFFICE OF SECRETARY OF STATE,

Augusta, February 19, 1862.

I hereby certify that the foregoing is a true copy of the original as deposited in this office.

LEWIS D. MOORE,

Deputy Secretary of State.

APPROVAL OF THE NATIONAL ADMINISTRATION.

RESOLUTIONS

OF THE

LEGISLATIVE ASSEMBLY OF NEVADA,

EXPRESSIVE

Of sympathy for and approval of the national administration.

APRIL 28, 1862.—Laid on the table, and ordered to be printed.

Be it resolved by the governor and legislative assembly of the Territory of Nevada, as follows:

That whereas the peace and harmony of our beloved Union, after years of prosperity unprecedented in the annals of national history, have been suddenly disturbed, and revolutionary theories, destructive of all constitutional liberty heretofore unthought of, are now unblushingly announced and advocated; and whereas the first legislative assembly ever convened within this Territory, which owes so much to the fostering care of our maternal government, is now in session: Therefore—

Resolved, That the legislative assembly fully concur in the just and patriotic sentiments so eloquently expressed by the governor in his message, and that we earnestly sympathize with and cordially and heartily approve the national administration in its efforts to maintain the integrity of the government and the perpetuity of the Union.

Resolved, That we deem a full, fair, and candid expression of our sentiments as not only highly proper, but also demanded by the exigencies of the times.

Resolved, That the people of the United States owe paramount allegiance to the national, and a subordinate allegiance to their State governments.

Resolved, That the present efforts of traitors and rebels to demolish the government, and to sever the Union of the States, is a lamentable illustration of the fruits of reckless ambition and the insane folly that would carry us back to barbarism for the sake of retaining in rebel hands the spoils of office and the brief prerogatives of power.

Resolved, That the doctrine that a majority should rule is the only one upon which a revolution can be avoided after the recurrence of each election, and that it is safer to trust to the intelligence of an educated community of voters than to force of arms.

Resolved, That this government was formed for the purpose of a more perfect Union, and declared to be so formed by the people of the United States; and, therefore, that the doctrine that a State may secede from the same is not only vitally at war with the principles upon which it was founded, but also a dangerous heresy.

Resolved. That the formidable rebellion which now seeks to destroy the best political system on earth has no terrors for the loyal and true citizen; that the government whose infancy has been nursed in the tempest, and rocked by the whirlwinds of national strife, and whose young vigor and mature strength has, thus far, been more than a match for its enemies at home and abroad, is not destined to expire ingloriously at the hands of rebels and traitors.

Resolved, That the readiness with which the people have everywhere responded to the call of the government, and the alacrity with which men and money have been furnished for the impending struggle, give cheering promise of future victory and final triumph.

Resolved, That the Territory of Nevada sends greeting to her sister Territories and the whole family of States, and pledges the strength of her mountains, the wealth of her mines, the unswerving loyalty of the popular heart, and the intense energy of her people to the service of our common country in its present hour of trial.

Resolved, That our delegate to Congress, Hon. John Cradlebaugh, is hereby requested to present the foregoing resolutions to the President, and that he have full authority at all times to pledge Nevada Territory for her full share in the existing struggle for the perpetuity of the Union and the integrity of the government.

Approved November 25, 1861.

GENERAL WINFIELD SCOTT.

JOINT RESOLUTION

OF THE

LEGISLATIVE ASSEMBLY OF NEVADA,

CONCERNING

The retirement of Lieutenant General Scott from active service in the army.

APRIL 28, 1862.—Laid on the table, and ordered to be printed.

Be it resolved by the governor and legislative assembly of the Territory of Nevada, as follows:

That we have learned with regret that the infirmities of age and the effects of wounds long since honorably received in the defence of his country have induced that veteran, General Winfield Scott, to ask and accept his retirement from the active command of the armies of our country now confronting traitors in the field.

That in the voluntary resignation of his high position at that advanced age, whereat men in general are extremely anxious to retain all the honors pertaining to their positions, we recognize that power of mind that only attaches to superior wisdom and elevated patriotism.

That the life-long services, the distinguished successes, and the unblemished patriotism of that great general and exemplary man have endeared him to every true American heart, and entitled him to the gratitude and reverence of all who can appreciate the inestimable blessings which spring from a character so high, actions so great, and a love of country so pure as his.

That our love, gratitude, and veneration will follow him into his retirement, and embalm him in our memories forever.

That he has rendered his name immortal, and achieved a place in history second to none who have aided in founding or upholding our republican form of government.

That in his example we shall look for a stimulus of that high character, honorable ambition, and undying love of country, which alone can uphold our national greatness, and preserve the liberty, the prosperity, and the happiness of our people.

That we hereby respectfully tender our heartfelt thanks to General Scott in token of our appreciation of his virtues and of our sense of the obligations which he has imposed upon his government and upon his countrymen everywhere.

Approved November 25, 1861.

MAILS AND MAIL ROUTES IN CALIFORNIA.

RESOLUTIONS

OF

THE LEGISLATURE OF CALIFORNIA,

IN FAVOR OF

The establishment of mails and mail routes therein named.

APRIL 29, 1862.—Referred to the Committee on the Post Office and Post Roads, and ordered to be printed.

Resolved by the assembly, the senate concurring, That our senators in Congress be instructed, and our representatives be requested, to procure an extension of the present tri-weekly mail route between the city of Sacramento and Lancha Plana, in the county of Amador, through the southern portion of the county of Calaveras, including therein the following places, to wit: Poverty Bar, Jenny Lind, Brushville, Salt Spring Valley, Copperopolis, and O'Byen's Ferry, in the said county of Calaveras, including Jeffersonville, in the county of Tuolumne, and terminating at Sonora, in said county. And also to procure the establishment of post offices at Brushville, Salt Spring Valley, and Copperopolis, in the county of Calaveras, and at Jeffersonville, in the county of Tuolumne.

Adopted February 7, 1862.

Resolved by the assembly, the senate concurring, That our senators in Congress be instructed, and our representatives requested, to use all honorable means in their power to procure the establishment of a daily mail from the town of Carson, Nevada Territory, to Aurora, Mono county, California, and for the establishing of a post office at Aurora.

Resolved, That his excellency the governor be requested to forward a copy of the above resolution to each of our senators and representatives in Congress.

Adopted February 22, 1862.

STATE OF CALIFORNIA,
Department of State.

I, William H. Weeks, secretary of state for the State of California, do hereby certify that the annexed is a true, full, and correct copy of original concurrent resolutions adopted by the legislature now on file in my office.

[L. s.] Witness my hand and the great seal of State, at office, in Sacramento, California, the thirteenth day of March, A. D. eighteen hundred and sixty-two.

WM. H. WEEKS,
Secretary of State.
 By A. A. H. TUTTLE,
Deputy.

REORGANIZATION OF THE ADJUTANT GENERAL'S
DEPARTMENT.

[To accompany bill H. R. No. 445.]

LETTER

FROM

THE SECRETARY OF WAR,

IN RELATION TO

The reorganization of the Adjutant General's office.

MAY 1, 1862.—Referred to the Committee on Military Affairs, and ordered to be printed.

WAR DEPARTMENT,
Washington City, April 29, 1862.

SIR: The Adjutant General has submitted to me the letter addressed by him to you of this date, respecting a bill for the better organization of the Adjutant General's office.

My own observation has satisfied me that there are in the service no more diligent, faithful, and meritorious officers than those engaged in the Adjutant General's office, and the proposed change is not only required by justice to them, but will contribute much to the advantage of the service.

Yours, truly,

EDWIN M. STANTON,
Secretary of War.

CHAIRMAN MILITARY COMMITTEE,
House of Representatives.

ADJUTANT GENERAL'S OFFICE,
Washington, April 29, 1862.

SIR: In asking Congress, as I am about to do, to give increased rank to the officers of my corps, I shall not dwell on the part taken by them in raising and organizing the vast and efficient army now in the field. I shall not even refer to the immense proportions assumed by that army since the close of the last (or extra) session of Congress,

2 REORGANIZATION OF ADJUTANT GENERAL'S DEPARTMENT.

and which have devolved such an extraordinary amount of labor on this office, and on the officers of the corps generally, and so largely added to the responsibility and importance of the duties performed by these gentlemen. There are other reasons than these for making the request, reasons vitally affecting the wellbeing and efficiency of the corps, and which I will endeavor to state as briefly as possible.

1. According to the regulations of our army, and to the theory and customs of our service, the assistant adjutant general of every army, army corps, division, and brigade, is, by the very nature of his office, chief of the staff on which he serves. Under the commanding officer, he directs the service of all the other departments of the staff, and of the whole command. His rank ought certainly to bear some proportion, then, to the paramount importance of his duties, as well as to the superior intelligence, knowledge, and ability, by aid of which alone can he hope to discharge them properly. But so very far is this from being the case now that the assistant adjutant general of General McClellan's army, though one of the highest officers of the corps, is but a *major*, and the assistant adjutant general of the armies of Generals Halleck and Buell, respectively, are but *captains*. Yet the armies cited are the largest in our service; and in European armies of the same size the one would have been a field marshal, the other two lieutenant generals. As a consequence, then, of the very inferior rank held by these officers, they are thrust aside from their rightful positions. Inspectors general, additional aides-de-camp, and officers of the line, are not only put over their heads, but actually put into their places. The whole corps suffers from this, and not only is unjustly disparaged in the estimation of the army, but even seriously damaged. So much so that, from having been a *corps d'élite*, the corps above all others into which the clearest heads and most accomplished soldiers of the army were most eager to gain admittance, it is now becoming daily more difficult to find officers of that description who will even accept of an appointment in it.

2. From the varied and extensive information, and large experience required of an assistant adjutant general, the field of selection should be very wide. Under existing laws this field is now confined to lieutenants, and to this there was no objection when the period of service in that grade averaged fourteen years. But now that, owing to the unexampled promotion which has taken place in the lower ranks of the army, scarcely half a dozen first lieutenants can be found in the whole army who have seen one year's service, unless permitted to select from the grade of captain, it will be impossible for me to recruit the corps with officers of the requisite knowledge and experience. Whatever, then, may be decided as to the higher grades, I ask for the change of the captains into majors, as indispensably necessary.

3. I have spoken of the injustice practiced on my assistants in the field, but it is not on the officers of the corps serving in the field that the present state of things bears hardest. Those on duty in this office, selected out of the whole corps on account of their superior fitness for the important duties here allotted to them, are those who suffer most from it. Chained to their duties here, they cannot be

spared to go into the field, though they have repeatedly asked to do so, and though frequent applications have been made for their services by our generals in command. Thus deprived of all opportunities of gaining distinction, cut off by the Senate's bill denying them brevets, from all hope even of any recognition of their arduous and valuable services, it is but natural that they should feel keenly the injustice of their position. The Senate, too, has just passed a bill giving the rank of major to the chief of staff of a division of volunteers, and that of lieutenant colonel, it is believed, or colonel, which would not be too much, to the chief of staff of an army corps; and yet, though the duties of my assistants here embrace *the whole army*, they are required to perform them with the low rank of captain or major! There is no justice in this, no propriety; and though a sense of what I owe to the army and the public will not permit me to part with these gentlemen, I can well understand what their feelings, under the circumstances, must be, and cannot find it in me to blame them. As a measure of justice, then, not to them individually so much as to the department to which they belong, and to the public interests, for which it so assiduously labors, allow me to urge upon you such a reorganization of the corps as you will find suggested in the accompanying draught of a bill respectfully submitted to your consideration. Under this bill, as you will observe, the corps, which is for the *entire army*, will not equal, in aggregate *rank*, the mere force of *additional* aides-de-camp allotted to some of our major generals commanding only portions of the whole, nor in number will it be increased.

I am, sir, with great respect, your obedient servant,

L. THOMAS, *Adjutant General*.

HON. FRANCIS P. BLAIR, Jr.,

Chairman of the House Committee on Military Affairs.

JOHN A. ANDREW.

EXECUTIVE DEPARTMENT, BALTIMORE, April 22, 1861.

MARYLAND,

At a session of the general assembly of Maryland, begun and held at the city of Annapolis, on the first Wednesday of January, being

MARYLAND AND MASSACHUSETTS.

PROCEEDINGS

IN THE

LEGISLATURE OF MASSACHUSETTS,

UPON

The act of the State of Maryland appropriating seven thousand dollars for the families of those belonging to the sixth regiment of Massachusetts volunteers who were killed or disabled by wounds received in the riot at Baltimore.

MAY 12, 1862.—Laid on the table, and ordered to be printed.

COMMONWEALTH OF MASSACHUSETTS.

To the honorable the House of Representatives :

I deem it due to the honorable conduct of the State of Maryland towards the surviving soldiers of Massachusetts wounded by the mob in Baltimore on the 19th of April, 1861, and towards the families of those soldiers who were disabled or slain, to make formal communication to the general court of Massachusetts of the action taken by the general assembly of Maryland for their relief.

I do, therefore, with this message transmit to the general court for its information a certified copy, this day received by me, of an act passed by the general assembly of Maryland entitled "An act for the relief of the families of those of the Massachusetts sixth regiment of volunteers who were killed or wounded in the riot of the 19th of April, 1861, in Baltimore."

JOHN A. ANDREW.

EXECUTIVE DEPARTMENT, *Boston, April 22, 1862.*

MARYLAND, *scd.*

At a session of the general assembly of Maryland, begun and held at the city of Annapolis, on the first Wednesday of January, being

the first day of the same month, in the year of our Lord eighteen hundred and sixty-two, and ended on the tenth day of March of the same year, his excellency Aug. W. Bradford, esq., governor, among others, the following law was enacted, to wit :

No. 99.

AN ACT for the relief of the families of those of the Massachusetts sixth regiment of volunteers who were killed or wounded in the riot of the nineteenth of April, eighteen hundred and sixty-one, at Baltimore.

Whereas the sixth regiment of Massachusetts volunteers, on their way to defend the national Capitol, were brutally attacked by a mob in the streets of Baltimore on the nineteenth day of April, eighteen hundred and sixty-one, and three were killed and eight wounded ; and

Whereas the State of Maryland is anxious to do something to efface that stain from her hitherto untarnished honor ; therefore—

SECTION 1. *Be it enacted by the general assembly of Maryland*, That the sum of seven thousand dollars be, and the same is hereby, appropriated and placed at the disposal of his excellency John A. Andrew, or any one acting as governor of the Commonwealth of Massachusetts, who shall disburse the same in the manner and proportion he thinks best for the relief of the families of those belonging to the sixth regiment of Massachusetts volunteers who were killed or disabled by wounds received in the riot of the nineteenth of April in Baltimore.

SEC. 2. *And be it enacted*, That this act shall take effect from the date of its passage.

BY THE HOUSE OF DELEGATES, *March 10, 1862.*

This engrossed bill, the original of which passed the house of delegates by yeas and nays on the 27th day of February, 1862, was this day read and assented to.

By order:

T. S. THOMAS, *Chief Clerk.*

BY THE SENATE, *March 10, 1862.*

This engrossed bill, the original of which passed the Senate by yeas and nays on the 5th day of March, 1862, was this day read and assented to:

By order:

C. HARWOOD, *Secretary.*

[The great seal of Maryland.]

A. W. BRADFORD.

MARYLAND, *scd.*

I, William A. Spencer, clerk of the court of appeals of Maryland, do hereby certify that the foregoing is a full and true copy of the act of the general assembly of Maryland, of which it purports to be a

copy, as taken from the original engrossed bill, deposited in and belonging to the office of the said court of appeals.

In testimony whereof I have hereunto set my hand as clerk, and
[L. S.] affixed the seal of the said court of appeals of Maryland this
19th day of April, A. D. 1862.

WM. A. SPENCER,
Clerk of Court of Appeals of Maryland.

COMMONWEALTH OF MASSACHUSETTS.

IN SENATE, *April 26, 1862.*

The committee on federal relations, to whom was referred the message of his excellency the governor, transmitting the act of the legislature of Maryland, entitled an act for the relief of the families of those of the Massachusetts sixth regiment of volunteers who were killed or wounded in the riot of 19th of April, 1861, at Baltimore, report the accompanying resolve.

Per order:

W. D. NORTHEND, *Chairman.*

COMMONWEALTH OF MASSACHUSETTS.

In the year one thousand eight hundred and sixty-two.

RESOLVE in relation to the act passed by the general assembly of Maryland for the relief of the families of the killed and wounded of Massachusetts at Baltimore, on the nineteenth of April, eighteen hundred and sixty-one.

Resolved, That the Commonwealth of Massachusetts hereby acknowledges the liberal appropriation of her sister State of Maryland, for the relief of the wounded and of the families of the killed of the sixth regiment of Massachusetts volunteers, in the lamentable occurrences at Baltimore on the nineteenth of April, eighteen hundred and sixty-one. The people of Massachusetts will welcome with sincere and cordial satisfaction this evidence of the generous sympathy of the people of Maryland, which will tend to restore and strengthen that kind and fraternal feeling which should ever exist between the citizens of the different States of this Union.

Resolved, That his excellency the governor be requested to transmit a copy of this resolve to his excellency the governor of Maryland, with the request that it be laid before her legislature at its next session.

IN SENATE, *April 28, 1862.*

The resolve in relation to the act passed by the general assembly of Maryland, for the relief of the families of the killed and wounded

of Massachusetts at Baltimore, 19th April, 1861, was discharged from the orders of the day and considered.

Hon. William D. Northend, of Essex, addressed the senate as follows :

Mr. PRESIDENT : In this hour of darkness to the republic, when suspicion and distrust prevail, and the public mind is inflamed with bitter animosities, the slightest occurrence exhibiting good will, the smallest word spoken in kindness by one portion of this people to another, is not without its beneficent effect. The State of Maryland, from her position, her business, her social connexions, and her institutions, was susceptible to the contagion of rebellion which had swept like a blight through States on her border. And, maddened by the distractions of the time, by the malaria which was borne upon every breeze from the south, a portion of her people committed a most grievous crime against the government by murderous assaults upon loyal citizens hastening to the national capital to protect it from traitor hands which were raised for its destruction, and the victims were men of Massachusetts, our own neighbors, brothers, and sons. Massachusetts felt most deeply the wrong, but she felt it more in sorrow and sadness than in anger. She mourned that any citizen could raise his hand against that government which had showered blessings upon all, and in whose perpetuity all her hopes of the future were centred. It was more to her than the loss of her children. And now, when by the patriotic efforts of the sons of Maryland, that noble State is rescued from the vortex of secession into which a portion of her people would have plunged her, she speaks to Massachusetts. She deplores the wrong which some of her citizens committed, and, although as a State she was not responsible for it, she sends from her treasury for the relief of the wounded and the families of the killed. The loyal heart of Maryland has spoken. Massachusetts will respond with a magnanimous spirit. Side by side, and shoulder to shoulder, the sons of Maryland and of Massachusetts are fighting the battles of our country ; and when the blessings of peace shall be proclaimed, with not a star obliterated from our banner, may all these experiences contribute to cement these two noble and ancient States in the common brotherhood of the Union.

Hon. Daniel S. Richardson, of Middlesex, spoke as follows :

The resolve now before the senate again calls to mind the circumstances under which the 19th day of April has been made a second time memorable in the history of our country. During the struggle of our forefathers for the independence of this nation, the first sacrifice of human blood to the great cause of freedom and the elevation of mankind, in the wisdom of Providence, was permitted to be on the 19th day of April, and it was the blood of citizens of the county of Middlesex, within our Commonwealth, shed on the soil of the town of Lexington, and before the eyes of their kindred and friends. After years of the enjoyment of that freedom, in the wisdom of Providence, on the same day of April, in the cause of liberty, another

sacrifice of human blood has been permitted, and, first of all, the blood of citizens of the same county of Middlesex, but on the soil of another State, away from kindred and friends. The city of Lowell, in that county, part of the senatorial district which I have the honor to represent at this board, furnished victims for the second sacrifice. It is with deep and almost overwhelming awe that I stand here and dare to contemplate the coincidence of day and month, and the further startling facts, that out of the immense territory of our Union, twice, and many years apart, first in the revolution, and second in this great and wicked rebellion, the first human blood should each time be required from the county of Middlesex. How can we help being certain that the extraordinary parallel will be carried still further, and that this second great struggle will as surely end successfully in preserving, as the first did in establishing, the Union.

At Lexington a monument stands over the remains, and in honor of the memory, of the yeomen of the county who fell at that place at the first sacrifice, and from it visitors from far and near have read and will forever read the great lesson of liberty. In Lowell, now an industrial city of nearly 40,000 inhabitants, but which forty years ago did not even have a municipal existence, from out of the industrial classes of the citizens, Luther C. Ladd and Addison O. Whitney, two young men who fell in Baltimore, have found an honored grave. Cruelly killed among strangers, whose liberties they were marching to protect, their remains were brought home to be followed to their last sacred resting-place by a weeping city. The remains of Sumner H. Needham, slain at the same time, rest in the younger and sister city of Lawrence, in the county of Essex, and those of Taylor, whose residence and friends are yet unknown, repose under the soil of the city of Baltimore, where he was killed. Ladd, Whitney, Needham, and Taylor will forever be remembered as the four patriots who fell in Baltimore on the 19th of April, 1861, and who first shed their blood in the suppression of this rebellion. Over their remains monuments will be erected to aid in teaching the second series of great lessons in our national history. What will those lessons be? Who dares answer, when he looks forward among the myriads who in the great and boundless future are to read them and to profit by them? To us, however, they offer words of instruction, which we may read with interest and possibly without error. Our revolution was a struggle of an intelligent people, the governed, to elevate and govern themselves by established laws and not by the will of men, an inestimable benefit to mankind, and this second struggle is to preserve the government thus established. Indeed, there is no escape from the conclusion, that as in both struggles the first blood was shed from among the yeomanry and industrial population of the country, so the great objects to be won and the certain results in both cases were to be for the benefit of the masses of the people and for their signal triumph over the ambitious and corrupt few, whose only aim was power.

The general court of Massachusetts has made provision for those who were injured, and for the families of those who were killed in

Baltimore. The additional pecuniary provisions so honorably made by the assembly of Maryland will add to the comforts of the sufferers, and the resolve before us acknowledges, in just and friendly terms, the generous act of the assembly. But this act of Maryland takes an almost infinitely higher position among men for other reasons than the comforts it affords these sufferers. As an indication of the supremacy of kindly feelings and brotherly love it is a priceless act. After the terrible and painful history of the past year it causes our blood to thrill through our veins to hear from divided and distracted Maryland, that angry passions have subsided and that calm reason and benign justice and right have gained the ascendancy there. Within less than a year from the time when the blood of the volunteer citizen soldiers of Massachusetts, of the sixth regiment, marching by order of the President of the United States to aid in defending the Union and suppressing rebellion, was shed in Baltimore by an angry and unmanageable populace, the assembly of Maryland, speaking for the people of the State, by which that body was elected, extends to the Commonwealth of Massachusetts the hand of friendship, and to those who were injured and the friends of those who were slain, comfort and relief. The stain of blood in the streets of Baltimore has become matter of history and can never be washed out; but the States of Maryland and Massachusetts do now, and we may well hope, when this rebellion is crushed out, will forever continue to maintain the most friendly relations with each other; and although they will alike regret the bloody sacrifice of April 19, 1861, they will forever look back upon it as permitted in the wisdom of Providence for the common good. That day's work formed no inconsiderable part of the events which aroused the patriotism of half a million soldiers, and brought them into the field in defence of the Union.

Maryland thus extends the hand of friendship to the more northern States. Missouri and Kentucky, through their acts and their sufferings, have done the same. Let Massachusetts and each State at the north cordially grasp their friendly hands. Let it be proclaimed and understood that as soon as the wild and wicked ambition of rebel leaders is put down, and the people of the seceding States, having been truly informed of the friendly feelings that at the north everywhere prevail towards them when separated from their false-hearted and corrupt leaders, will meet on common and friendly grounds, then each State will be welcomed back into the family of the Union, not as a dependent and subjugated territory, but as an equal and independent and sovereign State. And let us hope that this gleam of light which comes so cheerily from Maryland to Massachusetts (and I hope we shall signally recognize it by the unanimous adoption of this resolve) is the early morning twilight that follows the dark and stormy night which has been upon us, and that ushers in the bright and perpetual day of peace, prosperity, and happiness which this great and again friendly and united people is yet to enjoy, and the blessings of which they are to preserve and to transmit to posterity as an inheritance forever.

Hon. Alvah Crocker, of Worcester, spoke as follows:

Mr. PRESIDENT: God bless Maryland!—God bless the land of Carroll, of Hicks, of Johnson! Sir—for the noble act she has consummated—for the olive branch she has extended—for the germ of friendship she has planted, surely destined to put forth—to blossom—to bear the richest fruit—twining us together—drawing the cords of love around our very heart-strings—for this, I say, again, God bless her! Sir, it was my fortune in December last, to enjoy an interview at Maryland's capital, Annapolis, with some of the delegates of her assembly. The discussion at that time began in bitterness, to be ended in mutual confidence. I took occasion then, sir, to assure those men that Massachusetts was a Union-loving State, her people would stand by the Constitution of the United States, now and always, until changed by a constitutional majority. And during our discussion, sir, with our hearts warmed by this interchange of sentiment, they turned to our maimed and dead of Baltimore, of the memorable nineteenth of April, and to the condition of their friends, and to the subject of making the reparation acknowledged by this resolve, reparation *so befitting* the character of a sovereign State. I hailed it as the first dawn of light over our unhappy and bleeding country—of day breaking in upon us. Sir, when ultraism on both sides of “Mason and Dixon's line” shall have sufficiently drenched us in sorrow, in blood—when homes enough have been desecrated, families enough decimated, and, oh, sir, hearts enough stricken and broken, victims enough sacrificed to this hydra-monster, this Moloch of secession, of fanaticism; aye, sir, when again our proud eagle shall spread her broad pinions from Oregon to Mexico, our glorious flag again be *unfurled, saluted, honored*, every star again in its place, again shedding its appropriate lustre over all the broad acres of our land; aye, sir, with that sacred instrument of constitutional liberty now, too, again in its place though baptized, as it will be, in the *deepest crimson*, then again to be worshipped and venerated the more, as the pole-star of our future course, so long as Massachusetts has a heart to love and sustain it will she remember this act of comity of her sister State of Maryland, cementing and binding us together as it does more closely forever; and by us, sir, Massachusetts senators, now, hereafter, always, till cold in our coffins, shall the inspiration of this act of Maryland now before us be cherished and embalmed upon the page of grateful memory.

[The president (Hon. John H. Clifford) in putting the question upon the resolve, in order to give the most emphatic approval of the Senate to this fraternal legislation of Maryland and Massachusetts, requested the senators in favor of its passage to signify it by rising in their places; whereupon the resolve was unanimously passed.]

The resolve was then transmitted to the House of Representatives and unanimously passed in that branch.]

TO EXTINGUISH INDIAN TITLES IN KANSAS.

MEMORIAL AND RESOLUTIONS

OF

THE LEGISLATURE OF KANSAS,

TO

Extinguish certain Indian titles, and make an appropriation for surveys.

MAY 19, 1862.—Referred to the Committee on Indian Affairs, and ordered to be printed

STATE OF KANSAS,

Executive Office, Topeka, February 18, 1862.

SIR: I have the honor herewith to transmit to your honor the accompanying memorial of the legislature of the State of Kansas, passed this day.

Very respectfully, your obedient servant,

C. ROBINSON,

Governor of Kansas.

The Hon. SPEAKER of the House of Representatives, United States.

Memorial to Congress and concurrent resolutions, requesting Congress to extinguish certain Indian titles, and make an appropriation for surveys.

Whereas, a large number of loyal citizens are now settled on the Cherokee neutral and Osage lands, and upon the unsurveyed lands belonging to the United States within the State of Kansas, and

Whereas, emigration from other States, consequent upon the existing rebellion in the disloyal States, is directed to this State, and

Whereas, the surveyed portion of public lands situated in this State is comparatively small, and the Cherokee neutral and Osage Indian lands comprise a large extent of the most desirable and fertile lands in the State, the longer existence of which state of things will

inevitably discourage emigration hither, and tend to direct it into new channels, therefore—

Resolved, By the house of representatives of the State of Kansas, the senate concurring therein, that our senators and representative in Congress be requested to use their most earnest endeavors and influence to procure the necessary appropriation to extend the lines of the public surveys over the unsurveyed portion of the State, and to bring about, at the earliest practicable day, the extinguishment of the Indian title to the Cherokee neutral lands, Osage, Pottawatomie, Kickapoo, Sac and Fox, Ottawas, Kansas, Iowa, Sac and Fox of the Missouri, and the absent Shawnee Indian lands.

Resolved, That a copy of the foregoing preamble and resolution be transmitted by the governor to his excellency the President of the United States, the President of the Senate, the Speaker of the House of Representatives, and to our senators and representative in Congress.

HOUSE OF REPRESENTATIVES,
February 18, 1862.

The legislature of the State of Kansas has adopted the accompanying concurrent resolution, No. 9 :

“Requesting Congress to extinguish certain Indian titles, and make an appropriation for surveys.”

JOHN FRANCIS,
Chief Clerk House of Representatives.

His Excellency Governor CHARLES ROBINSON.

ARTICLES OF IMPEACHMENT OF WEST H. HUMPHREYS.

A R T I C L E S

EXHIBITED BY THE

HOUSE OF REPRESENTATIVES OF THE UNITED STATES,

IN

The name of themselves and of all the people of the United States, against West H. Humphreys, judge of the district court of the United States for the several districts of the State of Tennessee, in maintenance and support of their impeachment against him for high crimes and misdemeanors.

MAY 19, 1862.—Adopted, and ordered to be printed.

ARTICLE 1. That, regardless of his duties as a citizen of the United States, and unmindful of the duties of his said office, and in violation of the sacred obligation of his official oath "to administer justice without respect to persons," "and faithfully and impartially discharge all the duties incumbent upon him as judge of the district court of the United States for the several districts of the State of Tennessee agreeable to the Constitution and laws of the United States," the said West H. Humphreys, on the 29th day of December, A. D. 1860, in the city of Nashville, in said State, the said West H. Humphreys then being a citizen of the United States, and owing allegiance thereto, and then and there being judge of the district court of the United States for the several districts of said State, at a public meeting, on the day and year last aforesaid, held in said city of Nashville, and in the hearing of divers persons then there present, did endeavor by public speech to incite revolt and rebellion within said State against the Constitution and government of the United States, and did then and there publicly declare that it was the right of the people of said State, by an ordinance of secession, to absolve themselves from all allegiance to the government of the United States, the Constitution and laws thereof.

ART. 2. That, in further disregard of his duties as a citizen of the United States, and unmindful of the solemn obligations of his office as judge of the district court of the United States for the several

districts of the State of Tennessee, and that he held his said office by the Constitution of the United States during good behavior only, with intent to abuse the high trust reposed in him as such judge, and to subvert the lawful authority and government of the United States within said State, the said West H. Humphreys, then being judge of the district court of the United States as aforesaid, to wit, in the year of our Lord one thousand eight hundred and sixty-one, in said State of Tennessee, did, together with other evil-minded persons within said State, openly and unlawfully support, advocate, and agree to an act commonly called an ordinance of secession, declaring the State of Tennessee independent of the government of the United States, and no longer within the jurisdiction thereof.

ART. 3. That in the years of our Lord one thousand eight hundred and sixty-one and one thousand eight hundred and sixty-two, within the United States and in said State of Tennessee, the said West H. Humphreys, then owing allegiance to the United States of America, and then being district judge of the United States as aforesaid, did then and there, to wit, within said State, unlawfully, and in conjunction with other persons, organize armed rebellion against the United States and levy war against them.

ART. 4. That on the 1st day of August, A. D. 1861, and on divers other days since that time, within said State of Tennessee, the said West H. Humphreys, then being judge of the district court of the United States, as aforesaid, and J. C. Ramsay and Jefferson Davis, and others, did unlawfully conspire together "to oppose by force the authority of the government of the United States," contrary to his duty as such judge and to the laws of the United States.

ART. 5. That said West H. Humphreys, with intent to prevent the due administration of the laws of the United States within said State of Tennessee, and to aid and abet the overthrow of "the authority of the government of the United States" within said State, has, in gross disregard of his duty as judge of the district court of the United States, as aforesaid, and in violation of the laws of the United States, neglected and refused to hold the district court of the United States, as by law he was required to do, within the several districts of the State of Tennessee, ever since the 1st day of July, A. D. 1861.

ART. 6. That the said West H. Humphreys, in the year of our Lord one thousand eight hundred and sixty-one, within the State of Tennessee, and with intent to subvert the authority of the government of the United States, to hinder and delay the due execution of the laws of the United States, and to oppress and injure citizens of the United States, did unlawfully act as judge of an illegally constituted tribunal within said State, called the district court of the Confederate States of America, and as judge of said tribunal last named said West H. Humphreys, with the intent aforesaid, then and there assumed and exercised powers unlawful and unjust, to wit: In causing one Perez Dickinson, a citizen of said State, to be unlawfully arrested and brought before him, as judge of said alleged court of said Confederate States of America, and required him to swear allegiance to the pretended government of said Confederate States of America;

and upon the refusal of said Dickinson so to do, the said Humphreys, as judge of said illegal tribunal, did unlawfully, and with the intent to oppress said Dickinson, require and receive of him a bond, conditioned that while he should remain within said State he would keep the peace, and as such judge of said illegal tribunal, and without authority of law, said Humphreys then and there decreed that said Dickinson should leave said State.

2. In decreeing within said State, and as judge of said illegal tribunal, the confiscation to the use of said Confederate States of America of property of citizens of the United States, and especially of property of one Andrew Johnson and one John Catron.

3. In causing, as judge of said illegal tribunal, to be unlawfully arrested and imprisoned within said State citizens of the United States because of their fidelity to their obligations as citizens of the United States, and because of their rejection of, and their resistance to, the unjust and assumed authority of said Confederate States of America.

ART. 7. That said West H. Humphreys, judge of the district court of the United States as aforesaid, assuming to act as judge of said tribunal known as the district court of the Confederate States of America, did, in the year of our Lord one thousand eight hundred and sixty-one, without lawful authority, and with intent to injure one William G. Brownlow, a citizen of the United States, cause said Brownlow to be unlawfully arrested and imprisoned within said State in violation of the rights of said Brownlow as a citizen of the United States, and of the duties of said Humphreys as a district judge of the United States. And the House of Representatives, by protestation, saving to themselves the liberty of exhibiting at any time hereafter any further articles, or other accusation or impeachment against the said West H. Humphreys, and also of replying to his answers which he shall make unto the articles herein preferred against him, and of offering proof to the same and every part thereof, and to all and every other article, accusation, or impeachment which shall be exhibited by them as the case shall require, do demand that the said West H. Humphreys may be put to answer the high crimes and misdemeanors herein charged against him, and that such proceedings, examinations, trials, and judgments may be thereupon had and given as may be agreeable to law and justice.

ANNUAL REPORT

OF THE

BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION,

SHOWING THE

OPERATIONS, EXPENDITURES, AND CONDITION OF THE
INSTITUTION FOR THE YEAR 1861.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1862.

ANNUAL REPORT

BOARD OF REGENTS

SMITHSONIAN INSTITUTION

OPERATIONS, EXPENDITURES AND CONDITION OF THE
INSTITUTION FOR THE YEAR 1891

LETTER
OF THE
SECRETARY OF THE SMITHSONIAN INSTITUTION,
COMMUNICATING

*The Annual Report of the operations, expenditures, and condition of the
Smithsonian Institution for the year 1861.*

JUNE 5, 1862.—*Ordered*, That three thousand extra copies be printed for the use of the members of the House of Representatives, and two thousand for the use of the Smithsonian Institution.

SMITHSONIAN INSTITUTION,
Washington, June 4, 1862.

SIR: In behalf of the Board of Regents, I have the honor to submit to the House of Representatives of the United States the Annual Report of the operations, expenditures, and condition of the Smithsonian Institution for the year 1861.

I have the honor to be, very respectfully, your obedient servant,

JOSEPH HENRY,
Secretary Smithsonian Institution.

Hon. G. A. GROW,
Speaker of the House of Representatives.

ANNUAL REPORT OF THE BOARD OF REGENTS
OF THE
SMITHSONIAN INSTITUTION,

SHOWING

THE OPERATIONS, EXPENDITURES, AND CONDITION OF THE INSTITUTION UP
TO JANUARY, 1862, AND THE PROCEEDINGS OF THE BOARD UP TO MAY, 1862.

To the Senate and House of Representatives :

In obedience to the act of Congress of August 10, 1846, establishing the Smithsonian Institution, the undersigned, in behalf of the Regents, submit to Congress, as a report of the operations, expenditures, and condition of the Institution, the following documents :

1. The Annual Report of the Secretary, giving an account of the operations of the Institution during the year 1861.
2. Report of the Executive Committee, giving a general statement of the proceeds and disposition of the Smithsonian fund, and also an account of the expenditures for the year 1861.
3. Proceedings of the Board of Regents up to May, 1862.
4. Appendix.

Respectfully submitted.

R. B. TANEY, *Chancellor.*

JOSEPH HENRY, *Secretary.*

OFFICERS OF THE SMITHSONIAN INSTITUTION.

ABRAHAM LINCOLN, *Ex officio* Presiding Officer of the Institution.

ROGER B. TANEY, Chancellor of the Institution.

JOSEPH HENRY, Secretary of the Institution.

SPENCER F. BAIRD, Assistant Secretary.

W. W. SEATON, Treasurer.

WILLIAM J. RHEES, Chief Clerk.

JAMES A. PEARCE,

A. D. BACHE,

JOSEPH G. TOTTEN,

} Executive Committee.

REGENTS OF THE INSTITUTION.

H. HAMLIN, Vice-President of the United States.

ROGER B. TANEY, Chief Justice of the United States.

R. WALLACH, Mayor of the City of Washington.

JAMES A. PEARCE, member of the Senate of the United States.

W. P. FESSENDEN, member of the Senate of the United States.

L. TRUMBULL, member of the Senate of the United States.

S. COLFAX, member of the House of Representatives.

E. MCPHERSON, member of the House of Representatives.

S. S. COX, member of the House of Representatives.

W. B. ASTOR, citizen of New York.

W. L. DAYTON, citizen of New Jersey.

GEORGE E. BADGER, citizen of North Carolina.

T. D. WOOLSEY, citizen of Connecticut.

ALEXANDER D. BACHE, citizen of Washington.

JOSEPH G. TOTTEN, citizen of Washington.

MEMBERS EX OFFICIO OF THE INSTITUTION.

ABRAHAM LINCOLN, President of the United States.

HANNIBAL HAMLIN, Vice-President of the United States.

W. H. SEWARD, Secretary of State.

S. P. CHASE, Secretary of the Treasury.

E. M. STANTON, Secretary of War.

G. WELLES, Secretary of the Navy.

M. BLAIR, Postmaster General.

E. BATES, Attorney General.

ROGER B. TANEY, Chief Justice of the United States.

D. P. HOLLOWAY, Commissioner of Patents.

RICHARD WALLACH, Mayor of the City of Washington.

HONORARY MEMBERS

BENJAMIN SILLIMAN, of Connecticut.

A. B. LONGSTREET, of Mississippi.

CALEB B. SMITH, Secretary of the Interior.

PROGRAMME OF ORGANIZATION

OF THE

SMITHSONIAN INSTITUTION.

[PRESENTED IN THE FIRST ANNUAL REPORT OF THE SECRETARY, AND
ADOPTED BY THE BOARD OF REGENTS, DECEMBER 13, 1847.]

INTRODUCTION.

General considerations which should serve as a guide in adopting a Plan of Organization.

1. WILL OF SMITHSON. The property is bequeathed to the United States of America, "to found at Washington, under the name of the SMITHSONIAN INSTITUTION, an establishment for the increase and diffusion of knowledge among men."

2. The bequest is for the benefit of mankind. The government of the United States is merely a trustee to carry out the design of the testator.

3. The Institution is not a national establishment, as is frequently supposed, but the establishment of an individual, and is to bear and perpetuate his name.

4. The objects of the Institution are, 1st, to increase, and 2d, to diffuse knowledge among men.

5. These two objects should not be confounded with one another. The first is to enlarge the existing stock of knowledge by the addition of new truths; and the second, to disseminate knowledge, thus increased, among men.

6. The will makes no restriction in favor of any particular kind of knowledge; hence all branches are entitled to a share of attention.

7. Knowledge can be increased by different methods of facilitating and promoting the discovery of new truths; and can be most extensively diffused among men by means of the press.

8. To effect the greatest amount of good, the organization should be such as to enable the Institution to produce results, in the way of increasing and diffusing knowledge, which cannot be produced either at all or so efficiently by the existing institutions in our country.

9. The organization should also be such as can be adopted provisionally, can be easily reduced to practice, receive modifications, or be abandoned, in whole or in part, without a sacrifice of the funds.

10. In order to compensate, in some measure, for the loss of time occasioned by the delay of eight years in establishing the Institution, a considerable portion of the interest which has accrued should be added to the principal.

11. In proportion to the wide field of knowledge to be cultivated, the funds are small. Economy should therefore be consulted in the construction of the building ; and not only the first cost of the edifice should be considered, but also the continual expense of keeping it in repair, and of the support of the establishment necessarily connected with it. There should also be but few individuals permanently supported by the Institution.

12. The plan and dimensions of the building should be determined by the plan of organization, and not the converse.

13. It should be recollected that mankind in general are to be benefitted by the bequest, and that, therefore, all unnecessary expenditure on local objects would be a perversion of the trust.

14. Besides the foregoing considerations deduced immediately from the will of Smithson, regard must be had to certain requirements of the act of Congress establishing the Institution. These are, a library, a museum, and a gallery of art, with a building on a liberal scale to contain them.

SECTION I.

Plan of Organization of the Institution in accordance with the foregoing deductions from the will of Smithson.

TO INCREASE KNOWLEDGE. It is proposed—

1. To stimulate men of talent to make original researches, by offering suitable rewards for memoirs containing new truths ; and

2. To appropriate annually a portion of the income for particular researches, under the direction of suitable persons.

TO DIFFUSE KNOWLEDGE. It is proposed—

1. To publish a series of periodical reports on the progress of the different branches of knowledge ; and

2. To publish occasionally separate treatises on subjects of general interest.

DETAILS OF THE PLAN TO INCREASE KNOWLEDGE.

I.—*By stimulating researches.*

1. Facilities afforded for the production of original memoirs on all branches of knowledge.

2. The memoirs thus obtained to be published in a series of volumes, in a quarto form, and entitled Smithsonian Contributions to Knowledge.

3. No memoir on subjects of physical science to be accepted for publication which does not furnish a positive addition to human knowledge, resting on original research ; and all unverified speculations to be rejected.

4. Each memoir presented to the Institution to be submitted for examination to a commission of persons of reputation for learning in

the branch to which the memoir pertains ; and to be accepted for publication only in case the report of this commission is favorable.

5. The commission to be chosen by the officers of the Institution, and the name of the author, as far as practicable, concealed, unless a favorable decision be made.

6. The volumes of the memoirs to be exchanged for the transactions of literary and scientific societies, and copies to be given to all the colleges and principal libraries in this country. One part of the remaining copies may be offered for sale ; and the other carefully preserved, to form complete sets of the work, to supply the demand from new institutions.

7. An abstract, or popular account, of the contents of these memoirs to be given to the public through the annual report of the Regents to Congress.

II.—*By appropriating a part of the income, annually, to special objects of research, under the direction of suitable persons.*

1. The objects, and the amount appropriated, to be recommended by counsellors of the Institution.

2. Appropriations in different years to different objects, so that, in course of time, each branch of knowledge may receive a share.

3. The results obtained from these appropriations to be published, with the memoirs before mentioned, in the volumes of the Smithsonian Contributions to Knowledge.

4. Examples of objects for which appropriations may be made.

(1.) System of extended meteorological observations for solving the problem of American storms.

(2.) Explorations in descriptive natural history, and geological, magnetical, and topographical surveys, to collect materials for the formation of a Physical Atlas of the United States.

(3.) Solution of experimental problems, such as a new determination of the weight of the earth, of the velocity of electricity, and of light ; chemical analyses of soils and plants ; collection and publication of scientific facts accumulated in the offices of government.

(4.) Institution of statistical inquiries with reference to physical, moral, and political subjects.

(5.) Historical researches and accurate surveys of places celebrated in American history.

(6.) Ethnological researches, particularly with reference to the different races of men in North America ; also, explorations and accurate surveys of the mounds and other remains of the ancient people of our country.

DETAILS OF THE PLAN FOR DIFFUSING KNOWLEDGE.

I.—*By the publication of a series of reports, giving an account of the new discoveries in science, and of the changes made from year to year in all branches of knowledge not strictly professional.*

1. These reports will diffuse a kind of knowledge generally interesting, but which, at present, is inaccessible to the public. Some of

the reports may be published annually, others at longer intervals, as the income of the Institution or the changes in the branches of knowledge may indicate.

2. The reports are to be prepared by collaborators eminent in the different branches of knowledge.

3. Each collaborator to be furnished with the journals and publications, domestic and foreign, necessary to the compilation of his report; to be paid a certain sum for his labors, and to be named on the title-page of the report.

4. The reports to be published in separate parts, so that persons interested in a particular branch can procure the parts relating to it without purchasing the whole.

5. These reports may be presented to Congress for partial distribution, the remaining copies to be given to literary and scientific institutions, and sold to individuals for a moderate price.

The following are some of the subjects which may be embraced in the reports :

I. PHYSICAL CLASS.

1. Physics, including astronomy, natural philosophy, chemistry, and meteorology.
2. Natural history, including botany, zoology, geology, &c.
3. Agriculture.
4. Application of science to arts.

II. MORAL AND POLITICAL CLASS.

5. Ethnology, including particular history, comparative philology, antiquities, &c.
6. Statistics and political economy.
7. Mental and moral philosophy.
8. A survey of the political events of the world, penal reform, &c.

III. LITERATURE AND THE FINE ARTS.

9. Modern literature.
10. The fine arts, and their application to the useful arts.
11. Bibliography.
12. Obituary notices of distinguished individuals.

II.—*By the publication of separate treatises on subjects of general interest.*

1. These treatises may occasionally consist of valuable memoirs translated from foreign languages, or of articles prepared under the direction of the Institution, or procured by offering premiums for the best exposition of a given subject.

2. The treatises should, in all cases, be submitted to a commission of competent judges previous to their publication.

3. As examples of these treatises, expositions may be obtained of

the present state of the several branches of knowledge mentioned in the table of reports.

SECTION II.

Plan of organization, in accordance with the terms of the resolutions of the Board of Regents providing for the two modes of increasing and diffusing knowledge.

1. The act of Congress establishing the Institution, contemplated the formation of a library and a museum; and the Board of Regents, including these objects in the plan of organization, resolved to divide the income* into two equal parts.

2. One part to be appropriated to increase and diffuse knowledge by means of publications and researches, agreeably to the scheme before given. The other part to be appropriated to the formation of a library and a collection of objects of nature and of art.

3. These two plans are not incompatible one with another.

4. To carry out the plan before described, a library will be required, consisting, 1st, of a complete collection of the transactions and proceedings of all the learned societies in the world; 2d, of the more important current periodical publications, and other works necessary in preparing the periodical reports.

5. The Institution should make special collections, particularly of objects to illustrate and verify its own publications.

6. Also, a collection of instruments of research in all branches of experimental science.

7. With reference to the collection of books, other than those mentioned above, catalogues of all the different libraries in the United States should be procured, in order that the valuable books first purchased may be such as are not to be found in the United States.

8. Also, catalogues of memoirs, and of books and other materials, should be collected for rendering the Institution a centre of bibliographical knowledge, whence the student may be directed to any work which he may require.

9. It is believed that the collections in natural history will increase by donation as rapidly as the income of the Institution can make provision for their reception, and, therefore, it will seldom be necessary to purchase articles of this kind.

10. Attempts should be made to procure for the gallery of art, casts of the most celebrated articles of ancient and modern sculpture.

11. The arts may be encouraged by providing a room, free of expense, for the exhibition of the objects of the Art-Union and other similar societies.

12. A small appropriation should annually be made for models of antiquities, such as those of the remains of ancient temples, &c.

* The amount of the Smithsonian bequest received into the Treasury of the United States is.....	\$515,169 00
Interest on the same to July 1, 1846, (devoted to the erection of the building).....	242,129 00
Annual income from the bequest.....	30,910 14

13. For the present, or until the building is fully completed, besides the Secretary, no permanent assistant will be required, except one, to act as librarian.

14. The Secretary, by the law of Congress, is alone responsible to the Regents. He shall take charge of the building and property, keep a record of proceedings, discharge the duties of librarian and keeper of the museum, and may, with the consent of the Regents, *employ assistants*.

15. The Secretary and his assistants, during the session of Congress, will be required to illustrate new discoveries in science, and to exhibit new objects of art; distinguished individuals should also be invited to give lectures on subjects of general interest.

This programme, which was at first adopted provisionally, has become the settled policy of the Institution. The only material change is that expressed by the following resolutions, adopted January 15, 1855, viz:

Resolved, That the 7th resolution passed by the Board of Regents, on the 26th of January, 1847, requiring an equal division of the income between the active operations and the museum and library, when the buildings are completed, be, and it is hereby, repealed.

Resolved, That hereafter the annual appropriations shall be apportioned specifically among the different objects and operations of the Institution, in such manner as may, in the judgment of the Regents, be necessary and proper for each, according to its intrinsic importance, and a compliance in good faith with the law.

REPORT OF THE SECRETARY.

To the Board of Regents:

GENTLEMEN : In the discharge of my official duty as the principal executive officer of the Smithsonian Institution, I have the honor to present to you a report of the operations of the establishment for another year.

It could scarcely be expected that during the existence of an intestine war, and almost in the presence of two contending armies, the Institution should be able to conduct its affairs with the same persistence and success as in the tranquil years of its previous history. The interruptions and embarrassments, however, although frequent, and in some cases perplexing, have not prevented the continuance of the general operations of the Institution, or the prosecution of most of the special objects which had previously been determined upon as falling within the scope of the plan of its organization.

At an early period of the war it was for a time proposed by the government to occupy the building of the Institution as temporary quarters of some of the troops which were suddenly collected in defence of the capital. In relation to this proposition, it was represented to the War Department that there was no authority from the Board of Regents to grant the use of the building for the purpose intended, but that if the Secretary of War thought proper to take possession of the premises on his own responsibility, the best arrangements possible to secure the property from injury and at the same time to accommodate the soldiers, would cheerfully be made. It was, however, suggested that if an appropriation for such a purpose were found to be necessary, it would be more in accordance with the spirit of the Institution to employ the building as an infirmary. Fortunately, there was judged to be no absolute necessity for the contemplated occupation, and neither the building nor the grounds around it have been occupied for military purposes. In this, as in other instances, the government has evinced a considerate desire to protect the property of the Institution and to foster its operations.

It has been lately stated in a foreign journal, and the statement has

been widely copied in this country and in Europe, that the bequest of Smithson had been lost by improper investment; but those who are acquainted with the history of the establishment know that this statement is without the slightest foundation in fact. The government of the United States in accepting the bequest upon the stipulated terms of the will, became, by an act of Congress, approved by the President, the trustee of the fund and guardian of the Institution. The agent appointed to receive the money brought it to this country in British gold, and deposited it in the United States mint in Philadelphia, where it was recoinced into American eagles. The government thus became, by express enactment as well as by the highest equitable considerations, responsible for the security of the funds as well as for the faithful administration of the trust. It is true that the Secretary of the Treasury, before the money had been permanently invested by Congress, lent it to several of the western States to assist in carrying on their works of internal improvement; but it would have been alike inconsistent with strict justice and the liberal policy of our government, to devolve on the Smithsonian fund any risk or loss which might result from this financial operation. Congress, therefore, declared, by a joint resolution, that the money of the bequest was to be considered as a fund lent to the Treasury of the United States, the interest of which, at the rate of six per cent. per annum, is to be applied to the perpetual support and maintenance of the Institution. It is proper to state in this connexion that the government itself will in time, probably, be reimbursed for the money advanced to the States, since, in accordance with a rule established by the Hon. Robert J. Walker, when Secretary of the Treasury, all money received in the Treasury on account of the States to which the loan was made is to be retained until the debt of each is fully satisfied. In this way nearly four hundred thousand dollars have already been received.

Not only does the original fund of Smithson thus remain safe and unimpaired in the treasury of the United States, but, after paying for the building, collecting a library and museum, and conducting all the operations which have given character to the establishment, out of the income; an extra fund has been accumulated from the interest itself, which, at the date of the last report, yielded seven thousand seven hundred and sixteen dollars.

Unfortunately, a part of this fund has been unproductive during the past year. A petition from the Board of Regents was presented

to Congress at two successive sessions requesting that the extra fund which had been thus economised might be received into the treasury of the United States, and form a permanent addition to the original deposit. The proposition was favorably commended to Congress by a report of the committees to which it was referred, but from the pressure of business the recommendation was not acted on, and the directors of the establishment were obliged to seek some other investment of the money. State stocks naturally presented themselves as apparently offering the safest means of accomplishing the desired object, and accordingly a committee of the Board decided upon the purchase of bonds of the States of Indiana, Virginia, and Tennessee. About \$63,000 were expended in the purchase of the State stocks of Indiana, \$50,000 in those of Virginia, and \$11,000 in those of Tennessee. It is scarcely necessary to state that no interest has been received from Virginia and Tennessee since the date of the last report, and it is not probable that anything will be obtained from them for some years to come. The other sums invested in State stocks have yielded the usual amount of interest. The Virginia stock is still rated at 50 per cent. of its par value, and we trust that the State will, in time, be again able to discharge her obligations to this Institution; but in the interim there will be on this account a diminution in the annual income of nearly four thousand dollars.

As an offset to this effect of the unforeseen condition of the States above-mentioned, information has been received from London of the death, at an advanced age, of Madame De la Batut, the mother of the nephew of James Smithson, to whom an annuity was conceded as a compromise by the Hon. Richard Rush, with a view to the more expeditious realization of the Smithsonian legacy. The principal of this annuity, amounting to five thousand and fifteen pounds (about \$25,000) will now be added to the bequest of Smithson, of which it originally formed a part.

It has been considered advisable, in view of the distracted state of the country and the failure of the States before-mentioned to pay their interest, to curtail the expenditures of the Institution, as far as practicable, without suspending what have been denominated the *active* operations. Yet, while this cautious policy has been closely observed, it is believed that the Institution has sustained its character for efficiency, and that, although it has been exposed to the disturbing incidents of a theatre of war, it has still accomplished much during the year, and steadily advanced in the career prescribed by

its enlightened founder—the increase and diffusion of knowledge among men.

Publications.—The thirteenth volume of the Smithsonian Contributions is partly completed, but, on account of the unsettled condition of the times, it was thought prudent to delay the printing of several expensive papers until the beginning of the present year. It will be seen, however, in the course of this report, that the whole number of pages of printed matter which has been issued, or is now ready to be issued by the Institution, equals that of any previous year.

The first paper which has been printed for the thirteenth volume is the concluding part of the results of the discussion of the observations of Dr. Kane, fully described in the last report. On the completion of this series of papers, a number of full sets of the several parts have been bound, with a general title page, into a separate volume, which is intended for distribution to astronomical and meteorological societies to which the contributions in full are not presented.

Another series of papers, partly printed, gives a full discussion of all the meteorological observations made during the voyage of Sir F. L. McClintock, in search of Sir John Franklin, in the English steamer Fox, from the 1st of July, 1857, to September, 1859.

The records of these observations were presented by the commander of the expedition to the Institution for discussion and publication, in accordance with the plan adopted for those of Dr. Kane; and since they relate to the meteorology of this continent, and are the results of a private expedition, it was thought entirely consistent with the policy of the Institution to discuss and publish them at the expense of the Smithsonian fund. It would be of great interest to science, and particularly to the meteorology of this country, if all the observations which have been made in the Arctic regions were reduced and discussed on a uniform plan, like that adopted in regard to the observations of Dr. Kane. A correspondence has been commenced with the proper authorities in England in regard to the importance of such a work, offering the co-operation of the Institution in carrying it into execution.

In regard to the history of the observations made during the voyage of the "Fox," the following facts may be stated:

The last expedition of the British government in search of Sir John Franklin returned in 1854, without doing more than confirming what

had previously been ascertained—that the missing ships had spent their first winter at Beechy island. Later in the same year the celebrated traveller of the Hudson's Bay Company, Dr. Rae, ascertained that the missing voyagers had been seen on the west coast of King William's land in the spring of 1850, and that it was supposed they had all died on an estuary of the Great Fish river.

The attempts, in 1855, of the Hudson's Bay Company to explore this river resulted in obtaining but little additional information and a few relics from the Esquimaux. It was at this time that Lady Franklin, who had previously sent out three expeditions, again urged the renewal of the search, that the fate of her husband and his companions might not be left in uncertainty. She, therefore, undertook once more the responsibility and expense of a final effort to "follow their footsteps in their last journey upon earth," and if possible to give to the world the scientific results of the expedition for which these gallant men had probably sacrificed their lives. In the spring of 1857 Lady Franklin commenced the preparations for the contemplated expedition, and intrusted the command of it to Captain McClintock. The small steamer "Fox," of 180 tons register, was purchased for the service, and was put in readiness by the end of June. The expedition sailed from Aberdeen July 1, 1857, and after a favorable run across the Atlantic, passed Cape Farewell, the southern point of Greenland, on the 13th of July, and arrived at Fredericshaab on the 19th of the same month. After taking in coal at Waigat, they arrived at Upernavik, and then bore away on the 6th of August directly westward, for the purpose of crossing Baffin's bay, but on the evening of the 8th their progress in that direction was stopped by impenetrable ice in latitude $72^{\circ} 40'$ and longitude $59^{\circ} 50'$. They then steered to the northward, in the hope of finding a passage westward, but in this they were disappointed, and, on the 19th of August, became entangled in the ice, and thus remained 242 days, until April, 1858. During this period the "Fox" drifted from latitude 75° north and longitude 62° west, to latitude $63^{\circ} 40'$ north and longitude 59° west, or 1,385 statute miles in a southeasterly direction, almost to the lower extremity of Greenland.

On the 26th of April the ice suddenly and almost entirely disappeared, and the ship was again headed northward for another attempt, and arrived on the 19th of June in Melville bay, and thence again steered westward across Baffin's bay, and finally entered Lancaster sound in the beginning of August. They thence sailed westwardly

and southerly until they reached the longitude of 96° west; thence returned along Barrow's strait to the east, and southerly down Prince Regent's inlet to the mouth of Bellot strait, where, at a place named Port Kennedy, the vessel remained from the 27th of September, 1858, till August 9, 1859. From this point various excursions, with sleds, were made in different directions. The expedition returned to England in September, 1859.

During the whole continuance of the expedition a series of meteorological and other observations was made. Those of the first year were taken while the vessel was in a constant state of motion either sailing through the water, or drifting down Baffin's bay with the immense field of ice. Those of a considerable part of the second year were made while the ship was stationary at Port Kennedy.

The observations have all been arranged in four parts: the first relating to temperature; second, to winds; third, to atmospheric pressure; fourth, to miscellaneous phenomena, such as auroras, weather, specific gravity of sea-water, ozone, &c.

In the discussion of the records, the whole series has been divided into two groups, one of which is referred to a point in Baffin's bay, and the other to Port Kennedy.

The discussion of the temperatures of each group embraces—

- 1st. Diurnal variation.
- 2d. Annual variation.
- 3d. Relation of temperature to the phases of the moon.
- 4th. Temperature of different winds.
- 5th. Temperature of sea-water.

The discussion of the winds includes—

- 1st. Resultant direction for each month, season, and year.
- 2d. Velocity for each of these periods.
- 3d. Frequency of winds from different quarters.
- 4th. Quantity of air which passed over the station.
- 5th. Rotation of the winds.
- 6th. Investigation of particular storms.

A similar series of discussions is also given with regard to the barometer. These discussions have all been made at the expense of the Institution by Charles A. Schott, of the Coast Survey, according to the methods adopted by Sir John Herschel, in his admirable article on meteorology in the last edition of the *Encyclopedia Britannica*. They bring out a number of interesting results, particularly in regard to the rotation of the wind, the effect of the moon on the temperature, and the

connexion of changes of the weather in the arctic regions with those in the more southern latitudes of the continent of North America.

The observations for temperature were made at equal intervals day and night; in winter they were generally taken every two hours, in the summer every four hours. The register extends over twenty-seven months, and comprises a total number of 7,113 observations.

The highest monthly mean temperature occurred in July. In the first year, 1857, in latitude 62° , it was $45^{\circ}.53$. In the second year, (1858,) in latitude $74^{\circ}.4$, it was $36^{\circ}.60$. In 1859, latitude 72° , it was $40^{\circ}.12$. The lowest monthly mean temperatures were in January. That in 1858, in latitude $73^{\circ}.2$, was $-24^{\circ}.87$. The second, that in 1859, in latitude 72° , was $-33^{\circ}.57$.

The mean annual temperature of the year, as deduced from all the observations at Port Kennedy, in latitude 72° , was $1^{\circ}.85$. The highest temperature observed at the same place was 55° , which occurred July 29, 1859, and the lowest $-49^{\circ}.8$, January 21 and February 15 of the same year.

The extreme range, therefore, was $104^{\circ}.8$.

The highest temperature observed by Kane at Van Rensselaer harbor, in latitude $78^{\circ}.37$, was 51° , and the minimum $-66^{\circ}.4$, giving a range of $117^{\circ}.4$.

The greatest daily range of temperature was in June, amounting to $9^{\circ}.60$; the least in December, when it was $0^{\circ}.84$. At Van Rensselaer harbor, the greatest range occurred in April, and was $9^{\circ}.09$; and the least in November, amounting to 1° , showing a correspondence in amount of variation, but not in time.

On an average, the maximum temperature is reached between noon and 1 p. m., and the minimum between 2 and 3 a. m.; whereas at Van Rensselaer harbor, as observed by Dr. Kane, these hours were respectively 2 p. m. and 1 a. m.

One of the most interesting points of the discussion of the observations is that of the connexion of the phases of the moon with the low winter temperatures. This connexion was early suggested by arctic explorers, and was independently deduced from the observations by Kane. In order to investigate the question of this connexion the mean daily temperatures were divided into periods of five days, thus forming a table in which the dates of the occurrence of full and new moon are given with the corresponding mean temperatures. By taking the differences of the mean temperatures it is seen that the mean temperature is lower at full moon than at new moon by about

$7\frac{1}{4}$ degrees. This difference is less than that deduced from the observations of Kane at Van Rensselaer harbor, but of the same kind, and serves to establish the fact of the occurrence of maximum cold at the period of full moon. Mr. Schott, in his paper on the discussions of Kane's observations, has referred this cold to a secondary action. The moon, as is now established by direct experiment, radiates and reflects a considerable amount of heat to the earth, which is of the kind called dark heat, or that of such low intensity as to be readily absorbed by the vapor of our atmosphere, and particularly by clouds. The effect, therefore, of the full moon is to dissolve the clouds, and thus to give freer passage to the radiated heat from the earth into celestial space.

In order, however, that this explanation should be true, it is necessary that the heat from the moon should be more penetrating and have more effect upon the clouds than that from the earth; and that this is the case is not improbable, as a part of the heat from the moon is that reflected from the full meridian sun, while that given off from the earth is merely due to its own nocturnal radiation.

It is not probable, as we have stated in a previous report, that an equal difference of temperature at the time of new and full moon will be observed in middle latitudes, for, from the observations made at this Institution, the waves, as it were, of cold which reduce the temperature of the United States, frequently begin several days earlier at the extreme west; and hence while the full moon occurs nearly at the same moment of absolute time at all places on the surface of the earth, the maximum cold might occur in one place at the new, and in another at the full moon. In the arctic regions, on the other hand, where the moon is at the same moment visible from every meridian, the effects of its heat must be more perceptible and less masked by the operation of other causes. In the observations of a long series of years, however, the difference may, perhaps, be rendered manifest, even in the latitude of Washington.

Professor Dove, of Berlin, has called attention to the remarkable recurrence of cold about the 11th of May of each year, but nothing of this kind can be deduced from the observations during the voyage of the "Fox," although from the observations by Kane at Van Rensselaer harbor on the 13th of May, 1854, the temperature was $9^{\circ}.3$ lower than that computed for the mean of the same day at the same place.

The diminution of temperature at this period is evident from the

observations for long series in this country as well as in Europe, and has been attributed to some cosmical influence affecting the absolute amount of heat received by the earth at this time.

The deductions relative to the elevating and depressing influence of the wind upon temperature, show that in Baffin's bay the south-east winds are the warmest, and the southwest the coldest, and that the temperature is lowest during calms.

They show, also, that at Port Kennedy the east winds are the warmest, and the north winds the coldest; there, also, calms are attended with a depression of temperature.

Observations were made upon the temperature of the soil, by sinking a brass tube two feet two inches vertically into the ground. A padded thermometer was inserted in the tube, and the whole was covered with snow. The temperature in the external air was lowest about the 19th of January, and that in the tube about the 10th of March, when it reached $+5^{\circ}$. Hence the greatest cold in the ground at a depth of a little more than two feet occurred fifty-seven days later than at the surface.

In discussing the observations relative to the winds, the whole period, as in the case of the discussions of temperature, is divided into two parts—the first when the Fox was in Baffin's bay, and the second when she was at Port Kennedy. The number of daily observations varied from six to twelve; in all cases, however, at regular intervals. The method of reduction is that of Lambert, improved by Herschel and others, so as to include the velocity of the wind, and not merely the relative frequency.

The amount of wind, as estimated by the continuance and velocity from all directions, was resolved, plus and minus, into two directions—one, that of the meridian, and the other at right angles to it; and from these two components a resultant was deduced for each month, giving the average direction from which the wind came. In this discussion Mr. Schott assumes the south point of the horizon as the zero point, because azimuths in astronomy are read in this way, and he prefers reckoning from the south to the west, rather than from the south to the east, because the wind vane is found to rotate more frequently in the former direction.

The great variation in the direction and force of the atmospheric currents renders the calculation of resulting values for shorter intervals than a month unnecessary. At Port Kennedy the resulting direction of the wind is remarkably constant for different seasons.

In winter it is northwest by north; in summer north $\frac{3}{4}$ ths of a point west; for the whole year, N.NW $\frac{3}{4}$ W. The corresponding directions for Baffin's bay are nearly the same, and the final resultant direction for the year at the two localities are practically identical.

In the first year, while in Baffin's bay, the velocity of the wind was greatest in February and March, and least in June and July. In the second year, at Port Kennedy, it was greatest in October and November, and least in March and April.

The greatest amount of wind, both at Port Kennedy and Baffin's bay, was from the northwest, in accordance with the theory of the descent or sinking down of the heavier air in the colder regions, and its flowing thence to warmer portions of the earth. For the purpose of ascertaining the law of the rotation of the winds, the records were examined in reference to the number of times the vane arrived at each of the eight principal points, and also in reference to the sum total of angular movement in a direct and retrograde direction.

From this investigation it appears that the direction of the shifting of the wind in spring was direct; at other seasons retrograde, and that the total amount of angular motion in the course of a year was very nearly balanced.

At Rensselaer harbor the resultant rotation of the wind was found to be direct, and this was also the case in Baffin's bay, although it would appear from these discussions, that the law of the rotation of the wind which has been found to prevail in lower latitudes, does not hold with the same constancy in the arctic regions.

In the year 1857-'58, in Baffin's bay, there were 26 storms of an average duration of 19 hours; in these storms the prevailing winds were, almost to the exclusion of all others, from the northwest and southeast. At Rensselaer harbor, according to Kane, the winds during the prevailing storms were from the same points of the horizon. At Port Kennedy during the year 1858-'59 there were 22 storms recorded, in which the wind was from the northwest; in a few cases it was from the northeast; but in not one from the northwest or southeast.

The third part of the McClintock observations relate to the pressure of the atmosphere. These observations were recorded at equal intervals of two hours at one period, and of four hours at others. They were made with a mercurial barometer, and also with an aneroid.

The records of the readings of the two instruments were compared,

and from them a correction obtained to be applied to the aneroid. The differences appear remarkably regular, and show that the mean monthly readings of the aneroid may be relied on to the hundredth of an inch. The average correction was found to be .022 of an inch, a quantity which, strictly speaking, is composed of two parts, namely: of the true index error of the aneroid, and the specific differences of the two instruments in different latitudes. In the mercurial barometer a mass of metal is balanced against a mass of air, and, therefore, the indications are independent of a change of gravity, for the same reason that a pound weight in an ordinary scale balance is in equilibrium with the same amount of the material weighed, in whatever latitude the experiment may be made. Not so, however, with the aneroid barometer; as this instrument, like the spring balance, indicates the pressure by the reaction of an elastic material, it must be affected by a change in gravity, and consequently varies in its indications with a change of latitude.

The diurnal variation in the pressure of the atmosphere in the higher latitudes of the arctic regions is very small, and can only be satisfactorily traced by means of the combination of a great number of observations, while the fitful variations in the atmospheric pressure are frequently very large.

The minimum pressure both at Baffin's bay and at Port Kennedy occurred at about half after four o'clock a. m., and the maximum at about half-past seven o'clock p. m. The range of the diurnal fluctuation in Baffin's bay is .028, at Port Kennedy .048, and at Rensselaer harbor .010. There is, therefore, a diminution in the range as we go northward, and at the same rate diurnal variations would become insensible at about 80° of latitude.

The average height of the barometer varies in different months of the year; it is greatest in April and May.

The occurrence of the minimum is not simultaneous at the different stations; at Baffin's bay it was in January, at Port Kennedy in July, and at Rensselaer harbor in September, presenting results which clearly indicate that more observations are required to fix with precision the time at which it really takes place. The annual range of the barometer at Baffin's bay was .44, at Port Kennedy .41, and at Rensselaer harbor .21.

The relative pressure connected with different winds is also given. In Baffin's bay the north wind gave a maximum pressure; at Port Kennedy, and also at Rensselaer harbor, the south wind produced

this effect. In Baffin's bay the minimum pressure accompanied the southeast wind, while at Port Kennedy the same effect was produced by the northeast wind, and at Rensselaer harbor by the west and northwest. The lowest reading of the barometer occurred just before the commencement of violent storms.

Among the miscellaneous observations, perhaps the most important is one which relates to the aurora borealis. Captain McClintock observed that the streamers in all cases of the exhibition of this meteor appeared to come from the surface of open water, and not in any case from the fields of ice. This observation would go far to establish the truth of the hypothesis that auroral displays are due to electrical discharges between the air and the earth, and that these are interrupted by the interposed stratum of non-conducting ice.

On the occasion of a visit of Lady Franklin last summer to the Smithsonian Institution, I had the satisfaction of receiving, on behalf of the Regents, her expressions of thanks for the discussion and publication of these observations, connected as they are with the memory of her lamented husband.

Another paper which has been accepted for publication is entitled "Ancient Mining on the Shores of Lake Superior." This paper was received in July, 1856, but, owing to imperfections in the manuscript, its publication was indefinitely postponed. The subject, however, of which it treats has lately received so much additional interest from the investigations of the archæologists of different parts of Europe that we were induced to submit it again to the author for correction, and to have a more accurate map of the mining region prepared, as well as corrected drawings of the implements made, under the immediate superintendence of the Institution. The wood-cuts are now in the hands of the engraver, and the memoir will be prepared for distribution without unnecessary delay.

On reference to the first volume of "Smithsonian Contributions" it will be seen that among the contents of the mounds of the Mississippi valley, as figured by Squier and Davis, are implements and ornaments of copper, such as axes, chisels, knives, spear heads, rings, bracelets, &c. The copper of these articles frequently contains small portions of pure silver—perhaps originally in the form of crystals—which serve in a measure to identify the source from which the material came. Pure copper is comparatively a rare mineral, and nowhere on the surface of the earth has it been found in greater quantity and in larger masses than in that remarkable projection from

the southern shore of Lake Superior, called Keweenaw Point. Through the whole of this peninsula a band of metalliferous deposit extends more than a hundred miles in length, and from one to six miles in width. Within this band pure copper is found in immense masses, also in thinner veins and small boulders.

The Jesuit missionaries as early as 1636 mentioned the existence of copper in this region; their knowledge, however, was probably restricted to small pieces of copper found in the streams. The first actual attempts at mining in this region within historic times were made in 1791, by Alexander Henry, but it was not until about 1842 that active and successful operations were undertaken.

Previous to this period pits and small mounds of earth had been observed in the metalliferous region; but it was only in 1848 that these were discovered to be remains of ancient excavations connected with the mining of copper. After this fact was clearly ascertained, it was turned to a profitable account by modern explorers, who found that their predecessors had industriously ferreted out the rich lodes, and that copper was always to be found by the indications of the ancient "diggings," as these excavations are popularly called. The ground is mostly covered with a dense forest, and, in many cases, with fallen trees of a preceding growth, indicating a great lapse of time since the excavations were made. The present Indians of the region have no knowledge of the origin of these remains, or of the purpose with which they were connected. The implements employed by the ancient miners were those which European archæologists refer to what they call the stone age, and to the transition period denominated by them the bronze age. They consist of mauls and adzes of trap rock, and chisels of flint and of copper. Fire was not employed to melt the metal, but apparently to assist in disintegrating the rock. Levers of wood were used for elevating large masses, but with the implements mentioned the earth could only be penetrated to a short distance. For cutting wood, copper chisels and probably adzes and axes of the same metal were employed. The copper was hardened by hammering when cold, and not in any case by admixture with other metals. The primitive miners were unable to manage large masses, and consequently sought for lumps which could be readily beaten into the required shape.

The Lake Superior mining region does not appear to have been the place of permanent residence of a large number of tribes, for no

human remains or sepulchral mounds have been discovered, nor any evidence of the cultivation of the soil. From the extent of the works, and the difference in their apparent antiquity, it is probable that a large number of individuals were engaged, and during a long succession of years.

Miscellaneous Collections.—The Miscellaneous Collections include works intended to facilitate the study of the various branches of natural history, to give instruction as to the method of observing natural phenomena, and a variety of other matter connected with the progress of science. Although the object of the Institution is not educational, yet in carrying out the general plan it has been thought important in some cases to publish elementary treatises, which will not only furnish an introduction to special subjects to those who have not access to expensive libraries, but also serve to point out the way in which individuals by special studies can not only promote their own enjoyment, but also co-operate with all others engaged in the same pursuit in extending the domain of knowledge. The objects of nature, like the specimens of high art, are the luxuries of the cultivated mind, and the awakening of a taste for their study affords an inexhaustible source of pleasure and contentment to the most numerous and the most important classes of the community.

In accordance with this view it was stated in the last report that the following works were in preparation to introduce and facilitate the study of *conchology*, a branch of natural history not only interesting in itself, but also indispensable in the study of geology, as the ages and relative position of rocks are principally determined by the remains of this class of animals, which are found imbedded in their strata:

1st. Elementary introduction to the study of conchology, by P. P. Carpenter, of England.

2d. List of the species of shells collected by the United States exploring expedition, by the same author.

3d. Descriptive catalogue of the shells of the west coast of the United States, Mexico, and Central America, by the same author.

4th. Bibliography of North American conchology, by W. G. Binney.

5th. Descriptive catalogue of the air-breathing shells of North America, by the same author.

The first of these works was published as a part of the appendix to the report of the Regents for 1860, and, in order to meet the

special demand for the article, 1,000 extra copies were struck off in pamphlet form for separate distribution. To illustrate this work we have been promised by Dr. Gray, of London, a series of stereotype casts from the wood-cuts used in the British Museum catalogues. They were not received in time to be inserted in the report. We shall, however, distribute copies of them to all persons who have received the work in a separate form.

Mr. Carpenter, the author of these lectures, who is well known to the students in this branch of natural history, has presented in this work an account of the present condition of our knowledge of the molluscos animals, and completed a task which will go far to supply a want which has been experienced by all who have commenced the study of these objects. The only other popular introductory work on shells in the English language of a reliable and representative character, is Woodward's Manual of the Mollusca, from which it differs in some essential particulars, which better adapt it to the object intended. It includes an account of the extinct as well as the recent forms. The families and higher groups as well as the genera are necessarily very briefly characterized, but sufficiently so to enable the student, with perseverance and study, to identify the species and recognize their affinities. One of the best features of the work, and which will interest the accomplished naturalist as well as the elementary student, is a table of apparently similar shells belonging to different families or genera; or of shells whose general appearance is similar, but which, on account of more important characters, are separated into widely different genera. It is also proper to remark that the work is not confined to a description of the external covering of the animals, but also includes that of their soft parts.

The other numbers of the above mentioned series of works on conchology are still in course of preparation, and will be published as soon as they are completed.

It was also mentioned in the last report that a series of articles was in preparation to facilitate and promote the study of the *entomology* of North America. This branch of general zoology is perhaps larger than that of all the other branches taken together. In order to illustrate this statement we may mention, on the authority of Baron Osten Sacken, to whom we are specially indebted for advice and direction in regard to the best means of promoting this object, that according to the most recent computations, the number of species of insects in all parts of the world, is believed to be rather above than below one

million five hundred thousand, a considerable portion of which there is reason to suppose may be found in North America. To collect, arrange, and study such a vast number of objects requires a corresponding number of co-laborers; but fortunately for the advance of entomology, wherever a taste for it has been awakened, its votaries outnumber those of almost any other branch of natural history. There is scarcely one, says Osten Sacken, which offers equal facilities to the student who prosecutes its study—scarcely one which is so apt to become a favorite with every class of persons; and there is none, even botany not excepted, in which the mere gratification of taste can be so well combined with real scientific usefulness. It is adapted to every condition of life, because the specimens take up very little space, and require but trifling expense in collecting them; to every degree of education, for the number of insects being inexhaustible, any schoolboy may make collections or observations of great value to the more scientific investigator; it can be combined with almost any other pursuit, and can at any time be laid aside to be resumed at a more favorable moment.

Advancement of knowledge, however, naturally precedes its diffusion; therefore, before attempting to awaken a taste for the pursuits of entomological studies, it was necessary to bring this branch of natural history, as far as it relates to this continent, to a greater degree of perfection than that to which it had attained. American entomology is in this respect, as we are informed, far behind American botany. The systematical knowledge of the plants indigenous to the settled parts of North America is almost brought to perfection, and excellent manuals have been prepared, making it comparatively easy, even for a beginner, to identify most of the plants he may find. Not so with entomology; by far the greater number of our insects are still undescribed. The publications on American entomology are scattered through a great number of scientific transactions, most of which are in foreign languages, and therefore inaccessible to the many who would otherwise be interested in the study.

The first object of the Institution was, therefore, to collect and present in a compact and condensed form the existing knowledge; next, to increase this knowledge by encouraging further research by scientific men, so as to bring this branch of science to a certain degree of completeness and of symmetry in its different parts, and not until after this was accomplished to attempt its general diffusion. This

plan has been strictly pursued in the successive entomological works undertaken for the Institution, as will appear from the following account.

1. Among all the orders of insects which are found on the continent of North America, the Coleoptera (beetles) were the best known, owing principally to the exertions of Dr. Le Conte, of Philadelphia. What was wanted as regards this order for popular purposes was less the *increase* of knowledge than the condensation above alluded to. This has been aimed at in two publications by the Institution, namely, Melsheimer's Catalogue of the Coleoptera of the United States, revised by Haldeman and Le Conte, and published in 1853, and the Classification of the Coleoptera of North America, by Dr. Le Conte. The first part of the latter appeared in 1861, and the second will be issued soon. The first of these works facilitated research by furnishing a list of all the described species, with references to the works or scientific transactions containing them. The second will give a thorough and detailed account of the systematical distribution of the Coleoptera of this country, and thus offer to the student a faithful delineation of the present state of the science, and to the beginner a welcome hand-book for its acquisition.

2. The Lepidoptera, (butterflies, moths, &c.,) have always been, like the Coleoptera, a favorite order of insects, and a considerable number of descriptions of North American species was scattered through various works, transactions, &c. It was decided, therefore, to issue first, a list of these species, with references, on the plan of Melsheimer's catalogue of Coleoptera; next, a republication in a compact form of all these descriptions in English. Both these works were prepared, at the suggestion of the Institution, by Dr. Morris, of Baltimore, and published, the one as a catalogue, in 1860, the other as a synopsis of the described Lepidoptera of North America, in 1861. The latter will save to the lepidopterist much trouble and expense, by giving him in one volume what he would have had to look for in more than fifty different publications.

3. The order of Neuroptera (dragon flies, may flies, lace-wings, &c.,) contains, comparatively, a small number of species, and for this reason it was possible to produce at once a more perfect and thorough work on this order than has yet been prepared on any other. The synopsis of the Neuroptera of North America, with a list of the South American species, published in 1861, was prepared, at the request of the Institution, by Dr. Hermann Hagen, of Königsberg, one of the

first contemporary authorities in this branch, and principally from materials furnished by or through the medium of the Institution. It contains the description of 716 North American and a list of 507 South American species. The plan of this publication is essentially different from that of the synopsis of Lepidoptera, the latter being a mere compilation of existing descriptions, whereas the greater part of the descriptions contained in the former were drawn by Dr. Hagen from specimens in his possession, and thus the necessary uniformity and accuracy have been secured. The original manuscript in Latin was translated into English and prepared for publication by Mr. Ph. R. Uhler, of Baltimore.

4. The order of Diptera, (flies, mosquitoes, &c.,) is known to be exceedingly numerous and of rather difficult study, as much on account of the minuteness and great fragility of most of the species as of a peculiar inconstancy and comparative slightness of the characters used for classification. In this case, as in preceding ones, the first work directed by the Institution was one of condensation, namely, the Catalogue of the described Diptera of North America, by Baron Osten Sacken. It was published in 1858, and includes a list of about 1,700 species, with references to ninety-five works and papers containing their descriptions, principally in foreign languages.

The next thing to be done was either to furnish a republication of all these descriptions, like that of the synopsis of Lepidoptera, or to attempt at once to prepare a monograph of the order. Owing to the large collections formed by Baron Osten Sacken during his residence in this country, the latter was possible. It was deemed advisable to put these collections into the hands of Dr. H. Loew, of Meseritz, Prussia, one of the most eminent dipterologists now living, who will prepare a series of monographs on the different families of this large order, to be published by the Smithsonian Institution. The first volume of this series is now in the press.

It may be proper here to call attention to the great importance of having the first foundation of a study laid by the most eminent authority. This is especially necessary in regard to the Diptera, since, as we are informed, this class of American insects contains a great number of species, closely allied to European species, and consequently requires an intimate knowledge of the latter to identify the former. Besides this, there are many insects of the same class in this country altogether different from those of Europe, which will require the formation of new genera, a work which can only be prop-

erly done by one intimately acquainted with the entire subject. Dr. Loew has found, for instance, that a genus (*Paralimna* Fab. *Hydromysidae*) occurring in North America, and foreign to Europe, had been also discovered in Africa, and previously described. Almost any one but Dr. Loew would have formed a *new* genus of this insect, and the interesting fact of the occurrence of the same genus in Africa and America, and not in Europe, would have been, for a time at least, unknown to science. Some other curious results have been obtained by this naturalist from the study of Baron Osten Sacken's collections. A species of *borborus*, from Cuba, has been found identical with an African species, and from the matter on which this fly occurs (alvine dejections) it is probable that it has been accidentally imported into that island by a slave ship. A still more interesting result is the discovery of the striking analogy between the present American and the fossil tertiary fauna, coinciding with the analogy of the corresponding floras. Dr. Loew having monographed the fossil *Diptera* preserved in Prussian amber, and having described no fewer than 656 of such species, was better able than any one else to trace this analogy. The remarkable fact appears from his investigation that insects, some of them very singular, which are absolutely extinct in Europe, are now found living in America.

Such have been, up to the present time, the entomological publications of the Smithsonian Institution. They do not as yet embrace the three orders of *Hemiptera*, *Orthoptera*, and *Hymenoptera*. Mr. Ph. R. Uhler, of Baltimore, who has for several years made the North American *Hemiptera* (tree bugs, plant lice, &c.,) the special subject of his study, is preparing for the Institution a work in regard to these insects on the same plan as that of Hagen's *Neuroptera*, which it is expected will be soon ready for publication.

Little has yet been done for the *Orthoptera*, (grasshoppers, rear horses, crickets, &c.,) although, owing to the small extent of this order, it would be a comparatively easy task to produce a work similar to the synopsis of *Neuroptera*, if a sufficient collection of specimens were in existence. The Institution has adopted measures to have this desideratum supplied. The study of North American *Hymenoptera* (bees, wasps, &c.,) was undertaken several years ago by Mr. H. de Saussure in Geneva, and large collections have been furnished to him by the Institution. It is expected that his manuscript will soon be furnished for publication.

In order to complete the series of the entomological publications of the Institution, a want of the intelligent public remains to be supplied, that of a popular work on Entomology in general, designed to serve as an introduction to this department of zoology, and to facilitate its acquisition by presenting its elements in an attractive form, while at the same time infusing the true philosophical spirit of the science. Such a work is in contemplation, and will promote more than any other the diffusion of this branch of knowledge.

Reports.—The next class of publications consists of the annual Reports to Congress. These reports, which are printed at the expense of the Government, consist each of an octavo volume, limited to 450 pages. They contain the report of the Secretary, the acts of the Regents, and an appendix, consisting of a synopsis of lectures delivered at the Institution, extracts from correspondence, and information of a character suited to the meteorological observers, teachers, and other persons especially interested in the promotion of knowledge. The appendix to the report for 1860 contained three lectures of a course on Roads and Bridges, by Prof. Fairman Rogers, the remainder of which will be given in the report for 1861; an extended series of lectures on Mollusca or Shell-fish, and their allies, by Philip P. Carpenter; general views on Archæology, by A. Morlot, translated from the French; a series of articles translated from foreign journals; and extracts from correspondence, principally on meteorology and natural history.

Of this report 10,000 extra copies were ordered by Congress, of which 4,000 were presented to the Institution for distribution among its special correspondents. The requests for this work have been constantly increasing, and the demand for back numbers to complete sets has been greater than the Institution could supply.

The following general rules for the distribution of these reports have been adopted:

1st. They are presented to all the meteorological observers who send records of the weather to the Institution.

2d. To the collaborators of the Institution.

3d. To donors to the museum or library.

4th. To colleges and educational establishments.

5th. To public libraries and literary and scientific societies.

6th. To teachers, or individuals who are engaged in special studies, and who make direct application for the volumes.

The additional distribution of copies of these reports by Congress serves still more widely to make known the character and operations of the Institution, and to diffuse a species of useful knowledge which cannot otherwise be readily obtained.

Ethnology.—From the previous reports it will have been seen that the Institution has endeavored to promote various branches of the science of ethnology. Besides the works on Indian Archæology, it has presented to the world several papers which relate to language. In the report for 1860 a list of original manuscripts was given, relating to the languages of the western coast of North America, which had been received through the assistance of Mr. Alexander S. Taylor, of Monterey, California. Several of these have been carefully copied, at the expense of the Institution, with the intention of insuring their preservation and their subsequent publication. It has been suggested that the publication of a grammar and dictionary of one at least of each of the representative languages of North America would much facilitate the investigation of the general relations of the several parts of this branch of ethnology. With a view to carrying out this suggestion, means have been adopted to obtain information as to all the manuscripts which may possibly exist; and we have been so fortunate as to enlist the co-operation, in this important work, of a number of valuable collaborators. Among these are Mr. Alexander S. Taylor, of California; the Catholic clergymen of the western coast of North America; Mr. George Gibbs, of Washington Territory; Mr. Buckingham Smith, late Secretary of Legation to Spain, and Mr. J. G. Shea, of New York.

Mr. Shea, who has devoted much attention to the subject of comparative philology, has commenced the publication at his own expense of a “Library of American Linguistics,” which he is desirous of continuing as a labor of love; and since it would not be in accordance with the policy of this Institution to interfere with so praiseworthy an undertaking, but on the contrary to facilitate it by all the means in its power, it has been thought proper to present to Mr. Shea copies of all the collections which the Institution has yet made relative to this subject, and to purchase from him for distribution to learned societies a certain number of copies of all the works which he may publish. By adopting this course, which has been warmly recommended by some of the principal ethnologists of this country, more

service can be done in the way of advancing knowledge with the small appropriation which could be devoted to this purpose than by publishing the manuscripts, as was first intended, as a part of the Smithsonian Miscellaneous Collections. In accordance with this view, the grammar of the Mutsun language, mentioned in the last report, has been presented to Mr. Shea, and has been published by him as one of his series, full credit being given to the Institution in the title page, and in a separate advertisement.

The Mutsun Indians inhabited the country northwest of Monterey, California, comprising a district, according to Mr. Taylor, of 170 miles long by 80 broad, and are the most northerly tribe known of whose language the Spanish missionaries compiled a grammar. Their village lay in the centre of a valley which abounded in rich land, and as late as 1831 numbered twelve hundred souls. For the purpose of comparison this work therefore possesses great value. The late W. W. Turner says that this language is clearly the same as the Rumsen or Rumsien, one of the two spoken at the mission of San Carlos, and at the mission of La Soledad, further to the south. It also bears a considerable degree of resemblance to the language of the Costanos on the bay of San Francisco, and also a fainter one to other languages further north. The grammar is printed in superior style, on excellent paper, by J. Munsell, of Albany, and forms Part IV of the linguistic series above mentioned, the following being the titles of the three previous parts, viz:

1. A French Onondaga dictionary, from a manuscript of the 17th century.
2. A Selish or Flathead grammar, by Rev. Gregory Mengarini.
3. A grammatical sketch of the Hèvè language, spoken in the middle of the last century in Sonora; translated from an unpublished manuscript by Buckingham Smith.

Besides the fourth number, the other works which have been placed in the hands of Mr. Shea for publication are the Mutsun vocabulary, the Yakama grammar, and the Sextapay vocabulary. The paper on the languages of the western coast mentioned in the last report as in preparation by Mr. George Gibbs is still in progress. He has received several valuable additions of materials for comparison of the different languages under investigation.

The publication in the last report of the general views on archæology, by Morlot, of Switzerland, has awakened a new interest in the remains of Indian art found in all parts of the United States, and

various collections are now being formed, which will be of great interest in comparing analogous stages of the mental development of the primitive inhabitants of this country and those of Europe. For the purpose of assisting this comparison it is proposed to make photographic impressions of all type specimens which have been found in this country, to be distributed to the most distinguished archæologists in Europe, and to invite a general exchange of illustrations and articles of this character. Mr. Franklin Peale, of Philadelphia, has arranged with artistic skill, in thirty tablets, nearly a thousand specimens of arrow heads, hatchets, knives, chisels, and other instruments belonging to the stone period, and has ascertained by actual experiment that a photographic picture can be taken of each tablet of full size, which presents the form and peculiarities of each article with such distinctness that the impressions may serve almost as well as the specimens themselves for comparative study.

Meteorology.—The system of meteorological observations, organized and carried on successfully for several years past, has suffered more from the disturbed condition of the country than any other part of the operations of the Smithsonian establishment. But few records have been received since the commencement of the war from Virginia, Kentucky, and Missouri, and, with two or three exceptions, none from the States further south.

The withdrawal of the troops from the numerous stations along the coast of the Pacific and from the interior of the continent has materially diminished the number of observers reporting to the office of the Surgeon General.

The popular system of daily telegraphic reports of the condition of the weather from distant parts of the United States has been discontinued; the continuity of the lines to the south having been interrupted, and the wires from the north and west being so entirely occupied by public business that no use of them could be obtained for scientific purposes.

We may mention in this connexion that a daily bulletin of telegrams relative to the weather in different parts of Europe, similar to that established by this Institution, is published at the Imperial Observatory at Paris, copies of which are regularly transmitted to us, through the kindness of the director, M. Le Verrier. From an examination of these records we find that the meteorological phenomena

of the temperate zone in the eastern hemisphere travel eastwardly, or in the same direction that they are observed to follow in the United States. The meteorologists, however, of London and Paris, are by no means as favorably situated for predicting the coming weather as those of Washington, New York, or Boston, since the storm which approaches the former comes from the ocean and admits of but very limited telegraphic announcement, while those which are coming toward the latter can be heralded over thousands of miles of wire.

We have continued to receive records of observations from the northern and western States, Canada, the Hudson's Bay Territory, Mexico, and Central America.

It was stated in the last report that on account of the suspension of the annual appropriation from the Patent Office for meteorological statistics the process of reduction had been discontinued, and we regret to say that we have not been able to resume this work during the past year. The reductions, however, prepared by Professor Coffin, under the direction and at the joint expense of the Smithsonian Institution and the Patent Office, for the years 1854-'59, inclusive, are still in the hands of the public printer. The work cannot be hurried through the press, since much labor and care are required for proper correction of the proof sheets; the delay, however, has been mainly caused by the interruptions incidental to the entire change of system of Congressional printing, and the establishment of a government printing office. The work will form two large quarto volumes, the first of which is completed, with the exception of some introductory matter, and contains 1,270 pages. It exhibits the monthly and annual reductions for the barometer, thermometer, psychrometer, and rain guage, the observations on winds, clouds, &c.

The following statement from this volume of the number of observers for the several years, shows the growth of the system:

1854, embraces 234 stations.

1855, " 217 "

1856, " 320 "

1857, " 379 "

1858, " 390 "

1859, " 531 "

The second volume, which is also partly printed, will probably contain as many pages as the first, and will give the observations on

periodical phenomena, such as the appearance and disappearance of birds and animals, first and last frosts, dates of the opening and closing of rivers, lakes, harbors, &c.; also, detailed observations for the investigation of the principal storms of 1859; general tables of temperatures of several hundred places in North America, deduced from a series of years from all the reliable sources which could be commanded; also, a series of tables of rain at different places, deduced from observations for a series of years. The special object of the extended table of temperature is to furnish the materials for a more accurate isothermal map of the United States than has as yet been projected; and that of the rain tables, to present the data for a more reliable map of the average precipitation in the different parts of the country.

The volume will also contain special thermometric observations at stations distributed over the area extending from the Arctic regions to the northern States of South America, and from the Pacific to the Atlantic coast, for the purpose of showing the progress of cold periods across the continent, from the Rocky mountains to Bermuda. The same volume will also contain daily notices of the weather for the year 1859, gathered from published accounts, presenting items of information in a general and popular form, which may assist in the investigation of the movement of storms, and be of more interest to the general reader than the tabular statements of the principal part of the work.

The office work of the system of meteorology has continued in charge of William Q. Force, esq., of this city, to whom has also been intrusted the laborious duty of correcting the proof sheets of the volumes above mentioned.

Magnetic Observatory.—It was stated in the last report that as the changes in the direction and intensity of the magnetic force at Toronto were almost precisely the same as at Washington, it was concluded that more important service could be rendered to science by separating the points of observation to a greater distance. In accordance with this view, the instruments of the observatory on the Smithsonian grounds were sent to Key West, one of the Tortugas, where the United States has a military post, and the Coast Survey a tidal station. This location has been found well adapted to the purpose, and notwithstanding its proximity to the seat of active war, the photographic registration has been uninterruptedly kept up during the

past year, at the joint expense of the Coast Survey and the Smithsonian Institution.

Laboratory.—The operations of the laboratory during the past year have been principally confined to the examination and classification of the minerals which have been collected at the Institution from the various exploring expeditions, preparatory to a general distribution of the duplicates. This work has been intrusted to Mr. Thomas Egleston, of New York.

Facilities have been given to Professor Way, of London, for the exhibition of his improved method of producing an intense light for signals by means of the electrical deflagration of a stream of mercury, and the Institution is indebted to this gentleman for the present of a set of apparatus for exhibiting this light, and also of a powerful galvanic battery. The apparatus of the laboratory has been increased by a large Daniell's battery, consisting of fifty cylindrical copper cells, each six inches in diameter and fourteen inches high, with appropriate zinc elements of pure metal, procured expressly for the purpose from Mr. Wharton, of Pennsylvania.

Among the experiments which have been made, may be mentioned a series by Dr. Craig, on the effects of the explosion of gunpowder under pressure ; and another by the Secretary, on the burning of the same substance in a vacuum, and in different gases.

A series of researches was also commenced to determine more accurately than has yet been done the expansion produced in a bar of iron at the moment of magnetization of the metal by means of a galvanic current. The opportunity was taken, with the consent of Professor Bache, of making these experiments with the delicate instruments which had previously been employed in determining the varying length under different temperatures of the measuring apparatus of the base lines of the United States Coast Survey.

It may also be stated that the Secretary was requested by the War Department to report upon the practicability of employing balloons for military purposes, and in accordance with this request the several plans proposed by Mr. Lowe, of Philadelphia, and Mr. Helme, of Providence, were examined and practically illustrated on the Smithsonian grounds.

It may not be improper in this connexion to state that a considerable portion of the time of the Secretary, during almost every year since the beginning of the Institution, has been devoted to investiga-

tions pertaining to the operations of the general government. For these services no compensation has been asked or received.

It is believed that the Institution, through its Secretary and other officers, has been the instrument of important services to the government, which have repaid in some degree the fostering care which the latter has bestowed on the former.

Explorations.—For the purpose of obtaining a large number of duplicate specimens of the Zoology, Botany, and Mineralogy of North America, the Institution has not only furnished instructions and rendered assistance, in the way of making collections, to the various government expeditions undertaken during the last twelve years, but it has also engaged the services of persons of the requisite acquirements to make independent explorations. An account of these explorations has been given in the several reports for previous years, and it is therefore only necessary to mention at this time those which have been completed during the past year, or are still in progress.

The exploration in Lower California, near Cape St. Lucas, the southern extremity of the peninsula, by Mr. John Xantus, has been completed. The labors expended in this field have been truly remarkable. According to the statement of Professor Baird, Mr. Xantus has sent to the Institution sixty large boxes filled with specimens illustrating almost every branch of natural history. His explorations were not confined to the southern extremity of the peninsula, but extended many leagues up the coast on both the ocean and gulf sides. He also visited Mazatlan, on the Mexican coast, and made a valuable collection of birds. The specimens which he collected contain a large number of species never before described. These have been submitted for study and examination to some of the principal naturalists in this country and Europe. In closing the accounts of the explorations in Lower California it is necessary to acknowledge the services rendered to the natural history of this country by the Coast Survey, under the direction of Professor Bache, in affording Mr. Xantus, while discharging the duty of tidal observer, the opportunity of making these valuable collections at points which would otherwise be almost inaccessible to the naturalist.

The explorations by Mr. Robert Kennicott, in the northwestern part of this continent, are still going on, the Hudson's Bay Company having extended the time and afforded additional means for the prosecution of the work. From the latest advices from Mr. Kennicott,

he had reached Fort Yukon, on the Yukon river, a post in Russian America, and in a region almost entirely unknown, not only in regard to its natural history but also as to its geography. From this point he intended to continue his explorations to the mouth of Anderson river, on the coast of the Arctic ocean, and to return home about the end of the year 1863. It is proper to remark that in defraying the expense of this exploration the Institution has been assisted by the University of Michigan, the Chicago Audubon Club, the Chicago Academy of Natural Sciences, and by several gentlemen interested in natural history, and that without the facilities afforded by the Hudson's Bay Company and its officers the enterprise, as at present extended, could not have been accomplished. Not only has Mr. Kennicott been received as a guest at the different posts, but free transportation has been afforded for himself and his collections. It is gratifying to the friends of this zealous and accomplished young naturalist to learn that he has everywhere succeeded in exciting the sympathy and awakening the interest of the officers and employés of the foreign governments through whose territories his explorations have extended. And, thus, while actively engaged himself in extending our knowledge of these remote regions, he has diffused a taste for natural history, and enlisted the services of a number of active collaborators.

The officers of the Hudson's Bay Company have instituted local explorations at the principal stations, which, taken in connexion with what Mr. Kennicott is doing, bid fair to make the natural history of Western Arctic America as well known as that of any part of the continent. Among the most active of those who have become voluntary collaborators of the Institution is Mr. Bernard R. Ross, chief factor of the Mackenzie river district. From that gentleman we are receiving, from time to time, valuable collections of specimens to illustrate the natural history and ethnology of the region in which he resides.

Another gentleman, Mr. Lawrence Clark, jr., of Fort Rae, has contributed largely to our collection of specimens from the vicinity of Slave lake. Besides these, I must refer to the report of Professor Baird for the names of a number of other gentlemen who have made similar contributions from different parts of the Hudson's Bay territory, and other districts of North America.

Collections of Natural History, &c.—In the last report of the Institution, a distinction was made between the collections of natural his-

tory and the museum of the Institution; the object of the former being more essentially in accordance with the primary idea of the establishment, namely, the advance of science, and that of the latter a public exhibition of the natural history, principally of the North American continent, for popular as well as scientific study.

While it has not been contemplated to employ any large portion of the Smithsonian income in the support of a general museum, which, under the most favorable circumstances, must be, in a considerable degree, local in its influence, and can only produce its best effects when connected with an educational establishment, as in the case of the great museum now in process of being formed by Professor Agassiz at Cambridge, yet much labor and money have been expended in making the collections, with a view principally to obtain new materials for the investigation and illustration of the natural history, mineralogy, and geology of this country. As the primary object of the Institution is the advance of science, such a disposition of the specimens is sought to be made as will best secure this end.

The specimens may be divided into two classes—1st, those which have been described in the reports of government expeditions or the transactions of the Smithsonian and other Institutions; and 2d, those which have not been described, and which consequently are considered of much value by the naturalists who are interested in extending the several branches of natural history. Of both classes the Institution possesses a large number of duplicates, in the disposition of which some general principles should be kept constantly in view. After due consultation with naturalists, the following rules, which were presented in the last report, have been adopted relative to the *described* specimens :

First. To advance original science, the duplicate type specimens are to be distributed as widely as possible to scientific institutions in this country and abroad, in order that they may be used in identifying the species and genera which have been described.

Second. To promote education, as full sets as possible of general duplicates, properly labelled, are to be presented to colleges and other institutions of learning that profess to teach the principal branches of natural history.

Third. It must be distinctly understood that due credit is to be given to the Institution in the labelling of the specimens, and in all accounts which may be published of them, since such credit is not only

due to the name of Smithson, but also to the directors of the establishment, as vouchers to the world that they are faithfully carrying out the intention of the bequest.

Fourth. It may be proper, in the distribution to institutions abroad, as a general rule, to require, in case type specimens to illustrate species which have been described by foreign authors may be wanted for comparison or other uses in this country, that they be furnished at any time they may be required.

Fifth. In return for specimens which may be presented to colleges and other educational establishments, collections from localities in their vicinity, which may be desirable, shall be furnished when required.

In the disposition of the *undescribed* specimens of the collection, it is impossible to be governed by rules quite as definite as those which relate to the previous class, but the following considerations have been adopted as governing principles :

1. The original specimens ought not to be intrusted to inexperienced persons, or to those who have not given evidence of their ability properly to accomplish the task they have undertaken.

2. Preference should be given to those who are engaged in the laborious and difficult task of preparing complete monographs.

3. As it would be illiberal to restrict the use of the specimens, and confine the study of them to persons who can visit Washington, the investigator should be allowed to take them to his place of residence, and to retain them for a reasonable time.

4. The investigator must give assurance that he will prepare a set of type specimens for the Smithsonian museum, and will return all the duplicates, if required.

5. In any publication which may be made of the results of the investigation, full credit must be accorded to the Institution for the facilities which have been afforded.

At the last session of Congress an appropriation was made to assist in the general distribution of duplicate specimens, and this distribution has been carried on as efficiently as the laborious character of the work would allow. The mere distribution of the specimens among colleges and educational establishments in this country, without labels or descriptions, would be little better than scattering them to the winds; but to present them correctly named and described renders them important auxiliaries in the study of natural history, and indirectly in the advance of this branch of knowledge itself. But this

work requires a critical knowledge of each particular class of specimens, and consequently the co-operation of a number of experienced naturalists, each of acknowledged authority in his special department.

The assortment and labelling of the larger part of the shells is still in progress under Mr. Philip P. Carpenter, of Warrington, England, assisted by Dr. Alcock. Certain marine families have been sent to Professor Agassiz; a part of the fresh water shells has been named by Mr. Isaac Lea, of Philadelphia; another part by Mr. W. G. Binney, of New Jersey; another class of mollusks has been consigned to Mr. Busk, of England; and a third has been sent to Dr. Steenstrup, of Copenhagen.

The botanical collection is still in charge of Dr. Torrey, of New York, and Dr. Gray, of Cambridge.

The rocks and minerals have been partially labelled by Mr. Thomas Egleston, late a pupil of the School of Mines, Paris, who will probably finish the work during the present year.

The insects have been referred to Baron Osten Sacken, Dr. LeConte, Dr. Loew, Dr. Hagen, Dr. Morris, Dr. Clemens, Mr. Ulke, Mr. Uhler, and Mr. Edwards.

Certain classes of the mammalia have been examined by Dr. J. H. Slack and H. Allen, of Philadelphia; the birds by Mr. John Cassin, Mr. Elliott Coues, Dr. Bryant, and Mr. George N. Lawrence; the reptiles by Mr. E. D. Cope; the fishes by Mr. Alexander Agassiz, Mr. F. W. Putnam, Mr. Theodore Gill, and students of Professor Agassiz; the crustacea by Mr. Ordway and Mr. W. Stimpson; the radiata by Mr. Verrill and Mr. Stimpson; the fossils by Dr. Newberry, Mr. Meek, Dr. Hayden, and Dr. Gabb.

The whole of this part of the general business of the Institution has been, as heretofore, under the special charge of Professor Baird, to whose detailed report I would refer for a more particular account of these operations. From his report it will also be seen that the Institution has already distributed upwards of 80,000 specimens of natural history, and when it is recollected that each of these has been properly labelled and referred to printed lists, some idea of the amount of labor and time which has been expended on this work may be formed.

Type series of these specimens have been presented to the principal museums of Europe, and to the different societies for the promotion of natural history in this country. In every part, therefore,

of the civilized world, wherever natural history is cultivated, the name of the Institution has become familiar as a household word.

The distribution will be continued during the present year, provided no unforeseen event should occur to interrupt the operations now in progress.

Museum.—Considerable advance has been made during the year in improving the condition of the specimens for public exhibition in the museum. It is intended to label each article distinctly and accurately; but, although much labor has been expended on this work, it cannot be fully accomplished until all the specimens shall be thoroughly examined and properly described. A large number of additions has been made to the museum, and many imperfect specimens replaced by those of a better character.

During the past year Washington has been visited by a greater number of strangers than ever before since the commencement of its history. The museum has consequently been continually thronged with visitors, and has been a never-failing source of pleasure and instruction to the soldiers of the army of the United States quartered in this city or its vicinity. Encouragement has been given them to visit it as often as their duties would permit them to devote the time for this purpose.

Exchanges.—The system of exchanges has continued during the past year to be the principal means of communication between the scientific societies of the Old World and those of the New. As might have been expected, however, the number of copies of works sent abroad in 1861 was less than that of the previous year. The whole number of packages containing books, pamphlets, &c., sent abroad during the year was 1,099, containing, at least, 10,000 separate articles. The number of packages received in return, for societies in this country, exclusive of those for the Institution, was 1,406, which, on an average, would amount to upwards of 7,000 separate articles. During the same period there have been received by the Institution for its own library 2,886 books and other publications.

In return for the generous assistance the Institution has received in carrying on this system of exchange, it is proper to repeat what we have stated in previous reports, that the Cunard steamers between New York and Liverpool, the North German Lloyd between New York and Bremen, the Hudson's Bay Company, the Pacific Mail Steamship Company, and Panama Railroad Company, have carried

our packages free of cost on account of freight, and that the New York and Hamburg line has also generously rendered us a similar service. Adams' Express Company has transmitted our packages to and from different parts of the country at reduced rates. This appreciation of the objects of the Institution is as creditable to these companies as it is gratifying to the friends of the Institution.

Library.—Since the date of the last report the plan adopted in regard to the library has been steadily acted upon, namely: to obtain as perfect a series as possible of the transactions and proceedings of the learned societies which have existed, or now exist, in every part of the world. During the past year nearly 3,000 articles from societies abroad, and copies of nearly everything which has been published by societies in this country, in Canada, and South America, have been added to the list of scientific works previously in the library.

We have received no definite information since the date of the last report as to the progress which has been made, under the direction of the Royal Society, in the preparation of the classified index of all the papers contained in the transactions of learned societies, and in the scientific serials of different parts of the world. The work, however, is still going on, and will, without doubt, be completed as soon as so extensive an undertaking can be properly accomplished.

The second and concluding volume of the catalogue of zoological literature from 1750 to the present day, by J. Victor Carus, of Leipsic, which was mentioned in the last two reports, has been published; and we would again commend it to the patronage of naturalists as the best compilation which has yet appeared of the titles systematically arranged of isolated papers on zoology published in American as well as foreign journals.

Among the more important donations since the date of the last report are the following:

130 volumes from T. Einhorn, of Leipsic;

18 from the Institut de France;

27 from the Academy de Stanislas, Nancy;

13 from the Agronomical Society, of Poland;

21 from the Royal Swedish Society of Sciences;

11 from the Königlich Preussische Technische Bau-Deputation;

10 from Oberlausitzische Gesellschaft at Gorlitz;

30 from the University of Chile;

8 from the Imperial Printing Office, Vienna;

25 from the Royal Observatory, Greenwich;
33 from the Academy of Sciences, St. Petersburg;
and a valuable collection of works on natural history from one of the regents, General Joseph G. Totten, of the United States army.

Gallery of Art.—The Stanley collection of Indian portraits and scenes of Indian life, together with the Indian portraits received from the museum of the Patent Office, still continue to form an ethnological gallery of much interest to the numerous visitors of the Institution. The small appropriation which was previously made to repay Mr. Stanley for incidental expenses connected with this gallery has been continued during the past year. The application which Mr. Stanley has, for several years, made to Congress for the purchase of his gallery cannot be expected at this time to receive attention, although we hope that in a more favorable condition of the treasury an appropriation for the purpose will be granted.

The following are the additions which have been made to the collection of objects of art during the past year: A large marble bust of Pulaski on deposit; a colossal bust in plaster of Dr. Robert Hare. Another, of the same size, of Hon. George M. Dallas; also a bust of Thomas Jefferson, and another of Dr. E. K. Kane, all by purchase. They are original works of art, of considerable merit, by Henry D. Saunders.

Besides these, a series of busts in plaster, several valuable pieces of sculpture in marble, and a number of pictures, have been received from the museum at the Patent Office. Among the busts are the following: An excellent likeness of John Vaughan, for a long time librarian of the American Philosophical Society; one of Cuvier, the French naturalist; of Hon. Dixon H. Lewis, late member of Congress, remarkable for his immense bodily size; and of the Hon. Peter Force, of this city. Among the articles in marble are a full-sized medallion of Minerva from Pompeii, a half-size copy of the Apollo Belvidere, and two other half-size ancient statues, all of elaborate finish. Among the pictures is an original portrait of Washington by the elder Peale, painted immediately after the battle of Princeton. In addition to the foregoing, the collection has been increased by one hundred large engravings presented by Charles B. King, a well-known artist, who has resided many years in this city. These engravings are copies of celebrated pictures, and are illustrations of the style of some of the best masters of the art of engraving. They were to have been be-

queathed to the Institution, as Mr. King himself informed me, but he has lately concluded to present them before his death. A list of the engravings will be found in the appendix to the report of the present year, from which it will be seen that they form an interesting addition to the valuable collection of engravings already belonging to the Institution.

It was stated in the last report that, in accordance with the policy adopted by the Institution, it would be proper to co-operate with Mr. Corcoran in the liberal and generous enterprise he had undertaken of establishing a free gallery of art in the city of Washington, and to deposit in his collection the specimens which might belong to this establishment, due credit being given to the name of Smithson for all additions of this kind to the gallery in question. The condition of the country has, however, for the present interfered with the prosecution of the original design of Mr. Corcoran, and the large and elegant building which he has erected for carrying out his ideas is now occupied by the government as a depot for military stores.

Lectures.—On account of the uncertainty as to the amount of income of the Institution, and the distraction of the public mind in regard to the war, it has been thought advisable not to make any definite arrangements for the usual course of popular lectures during the season of 1861-'62. A few lecturers, however, have lately been engaged, and at least a partial course will be given.

As stated in previous reports, the lecture-room of the Institution is the most commodious apartment in the District of Columbia for public meetings, and frequent applications are made for its use for lectures and public assemblages not connected with the operations of the Institution. The use of the room has been freely allowed under the following conditions: First. That the object for which it was required should be of a benevolent character, or in some respects in accordance with the general operations of the establishment. Second. That subjects connected with sectarianism in religion, discussions in Congress, and partisan politics should be excluded. Third. That the actual expense of the gas and attendance should be defrayed by the parties who used the room.

The privileges granted with these restrictions, although, perhaps, of advantage to the city, have been found to be attended with unfavorable results to the Institution. At first the number of applicants was small, and principally confined to cases in which the

privilege could be granted without hesitation; the number has, however, been constantly increasing, and during the past half year there has scarcely been a day in which the favor has not been urgently solicited by some of those who flock to this city with plans and inventions by which, as it is asserted, the government and the public are to be greatly benefited. These applications are prompted not only by the consideration that the use of the room may be obtained without charge, but also by the desire to connect the name of the Institution with the schemes or doctrines with which the public are to be impressed.

Since the custom was first introduced of granting the use of the room for the purposes before mentioned, a large amount of valuable property has been accumulated in the building, which is especially exposed at night to injury and loss from fire and other causes. On this account, as well as that of the insulated and exposed position of the grounds, an extra corps of watchmen is required for the protection of the property every time the building is open at night for public purposes.

Again, it has been found a disagreeable matter to allow, even for benevolent purposes, a charge to be made by other parties for entrance to the building while, in accordance with the policy of the Institution, admittance is free to every one.

But the greatest difficulty which has been met with in regard to granting the use of the lecture room for other purposes than those of the Institution, is that of strictly enforcing the rules relative to the discussion of political and sectarian subjects, and the consequent impossibility of preventing the name of the Institution from being associated in the mind of the public with topics alike foreign to its peaceful character and its scientific reputation. It is in vain to disclaim the connexion of the Institution with the discussion of these subjects. The popular mind, particularly at a distance, cannot discriminate between the lectures given under the sanction of the Institution and those which are simply permitted to be delivered within its building.

In view of these facts it becomes a matter of grave deliberation whether or not the use of the lecture room ought to be granted for purposes not connected with the operations of the Institution; but, under existing circumstances, perhaps the subject had better be postponed for future consideration.

Respectfully submitted,

JOSEPH HENRY, *Secretary.*

APPENDIX TO THE REPORT OF THE SECRETARY.

SMITHSONIAN INSTITUTION,
Washington, December 31, 1861.

SIR: I have the honor herewith to present a report for 1861 of the operations intrusted to my charge, namely: those which relate to the printing, the exchanges, and the collections of natural history.

Very respectfully, your obedient servant,

SPENCER F. BAIRD,
Assistant Secretary Smithsonian Institution.

Prof. JOSEPH HENRY, L.L. D.,
Secretary Smithsonian Institution.

PRINTING.

The publications of the past year have consisted principally of works belonging to the octavo series of Smithsonian miscellaneous collections and reports, and they amount to about 1,400 pages.

EXCHANGES AND TRANSPORTATION.

As might have been expected, the operations in this department show a decrease in magnitude as compared with 1860. That year, however, was an exceptional one, and the receipts of 1861, though inferior to those of 1860, are yet equal to the average of preceding years. Many works of great value have been added to the library of the Institution, and numerous series of foreign transactions completed to date. The transmissions of books and pamphlets on behalf of American institutions has been very large, and the returns of corresponding magnitude.

It will be observed by the annexed table that the Smithsonian Institution is not only the medium of literary and scientific communication between the Old World and parties in the United States, but performs the same office for all the principal institutions in the remaining countries of America, as Canada, Cuba, Mexico, Chile, Brazil, New Granada, &c.

In 1861, as in previous years, very important services have been rendered by various transportation companies in the reduction or remission of freights. Among these may be mentioned from previous years the Pacific Mail Steamship Company, the Panama Railroad Company, the Cunard steamers, the Bremen or North German Lloyd, the Hudson's Bay Company, the Adams Express Company, &c. During the past year the directors of the New York and Hamburg

line have also authorized their agents to forward packages to or from the Institution free of charge.

The Institution is under many obligations to Mr. A. B. Forbes and Mr. Samuel Hubbard, of the Pacific Mail Steamship Company, in San Francisco, for important services in facilitating and conducting its general business of exchanges, shipments, &c., on the Pacific coast.

The domestic agents of exchange, consisting of Messrs. Swan, Brewer & Tileston, Boston; D. Appleton & Co., New York; J. B. Lippincott & Co., Philadelphia, and Robert Clarke & Co., Cincinnati, have, as heretofore, received and distributed without charge the copies of Smithsonian contributions to knowledge addressed to institutions within their reach.

A.

Receipt of books, &c., by exchange in 1861.

Volumes :

Octavo.....	572
Quarto.....	196
Folio.....	53
	821

Parts of volumes and pamphlets :

Octavo.....	1,255
Quarto.....	583
Folio.....	107
	1,945

Maps and charts..... 120

Total..... 2,886

B.

Table showing the statistics of the foreign exchanges of the Smithsonian Institution in 1861.

Agent and country.	Number of addresses.	Number of packages.	Number of boxes.	Bulk of boxes in cubic feet.	Weight of boxes in pounds.
1. Dr. FELIX FLÜGEL, <i>Leipsic.</i>					
Sweden.....	13	26	.....	.....	.....
Norway.....	6	11	.....	.....	.....
Denmark.....	10	16	.....	.....	.....
Russia.....	29	46	.....	.....	.....
Holland.....	25	45	.....	.....	.....
Germany.....	232	342	.....	.....	.....
Switzerland.....	21	34	.....	.....	.....
Belgium.....	11	21	.....	.....	.....
	347	541	30	278	7,840

B.—Table showing the statistics of the foreign exchanges, &c.—Continued.

Agent and country.	Number of ad- dresses.	Number of pack- ages.	Number of boxes.	Bulk of boxes in cubic feet.	Weight of boxes in pounds.
2. HECTOR BOSSANGE & SONS, <i>Paris</i> .					
France	69	129	.....	.....	.....
Italy	39	64	.....	.....	.....
Spain	5	9	.....	.....	.....
Portugal	2	4	.....	.....	.....
	115	206	7	94	2,588
3. ROYAL SOCIETY, <i>London</i> .					
Great Britain and Ireland	151	205	6	73	2,030
4. <i>Rest of the world</i>	52	147	30	180	4,500
Total	665	1,099	73	625	16,958

N. B.—The total number of volumes in these 1,099 packages amounts to about 10,000.

C.

Addressed packages received by the Smithsonian Institution from parties in America for foreign distribution in 1861.

	<i>Number of packages.</i>
<i>Albany, N. Y.—</i>	
New York State Agricultural Society	10
<i>Boston, Mass.—</i>	
American Academy of Arts and Sciences	118
Boston Society of Natural History	64
Prof. Jules Marcou	20
<i>Cambridge, Mass.—</i>	
American Association for Advancement of Science	53
Prof. A. Gray	27
<i>Chicago, Ill.—</i>	
Lieut. Col. James D. Graham, U. S. A	907
<i>Columbus, Ohio.—</i>	
Ohio State Board of Agriculture	100
Leo Lesquereaux	50
<i>Dorchester, Mass.—</i>	
Dr. Ed. Jarvis	25

*Number of packages.**Indianapolis, Ind.—*

Institution for Deaf and Dumb 18

New Haven, Conn.—

American Journal of Science 104

Prof. G. J. Brush 4

Little Rock, Ark.—

State of Arkansas 800

New York.—

New York Lyceum of Natural History 68

Astor Library 6

Charles B. Norton 500

Philadelphia, Pa.—

Academy of Natural Sciences 173

American Philosophical Society 119

Entomological Society of Philadelphia 12

Princeton, N. J.—

Prof. Arnold Guyot 12

Providence, R. I.—

State of Rhode Island 6

St. Louis, Mo.—

St. Louis Academy of Sciences 163

San Francisco, Cal.—

California Academy of Natural Sciences 50

Toronto, Canada.—

Canadian Institute 5

Washington, D. C.—

U. S. Patent Office 20

U. S. Coast Survey 69

Secretary of War 120

Captain A. A. Humphreys 24

3,627

D.

Addressed packages received by the Smithsonian Institution from Europe, for distribution in America, in 1861.

	Number of packages.		Number of packages.
<i>Albany, N. Y.</i>		<i>Boston, Mass.—Continued.</i>	
Albany Institute.....	2	Bowditch Library.....	1
Dudley Observatory.....	3	Geological Survey.....	2
New York State Agricultural Society..	7	Massachusetts Historical Society.....	2
New York State Library.....	2	New England Historic-Genealogical	
New York State Medical Society.....	1	Society.....	1
Dr. Brunnow.....	1	Prison Discipline Society.....	1
Professor James Hall.....	8	Public Library.....	8
		State Library.....	6
<i>Amherst, Mass.</i>		James Barnard.....	1
Amherst College.....	4	M. Girard.....	2
		Edward Habich.....	1
<i>Annapolis, Md.</i>		Dr. E. Jarvis.....	3
State Library.....	2	Professor C. T. Jackson.....	2
		Professor Jules Marcou.....	2
<i>Ann Arbor, Mich.</i>		Professor Moreland and F. Minot.....	1
Observatory.....	5	Professor W. B. Rogers.....	2
Professor Brunnow.....	1	Geo. Ticknor.....	1
		<i>Brookline, Mass.</i>	
<i>Augusta, Me.</i>		Dr. Lyman.....	2
State Library.....	2		
		<i>Brooklyn, N. Y.</i>	
<i>Austin, Texas.</i>		Dr. Louis Bauer.....	1
State Library.....	2	E. Nugent.....	1
		<i>Brunswick, Me.</i>	
<i>Baltimore, Md.</i>		Bowdoin College.....	3
Maryland Historical Society.....	5	Historical Society of Maine.....	1
Snowdon Piggot.....	1	A. S. Packard.....	2
		<i>Burlington, Iowa.</i>	
<i>Baton Rouge, La.</i>		Iowa Historical and Geological Insti-	
State Library.....	2	tute.....	1
		<i>Burlington, Vt.</i>	
<i>Bogota, New Granada.</i>		University of Vermont.....	4
Sociedad de Naturalistas Neo Granadi-			
nos.....	3	<i>Cambridge, Mass.</i>	
Sociedad Economica de Amigos del		American Association for Advance-	
Pais.....	1	ment of Science.....	14
		Astronomical Journal.....	3
<i>Boston, Mass.</i>		Astronomical Observatory.....	13
American Academy of Arts and Sciences	63	Harvard College.....	15
American Statistical Association.....	7	Nautical Almanac Office.....	1
American Unitarian Association.....	1	Professor L. Agassiz.....	25
Boston Society of Natural History.....	54		

D.—*Addressed packages received by the Smithsonian Institution, &c.*—Continued.

	Number of packages.		Number of packages.
<i>Cambridge, Mass.</i> —Continued.		<i>Concord, N. H.</i>	
G. P. Bond	3	New Hampshire Historical Society	4
Professor Clark	1	State Library	2
Dr. B. A. Gould	10		
Professor Asa Gray	11	<i>Des Moines, Iowa.</i>	
Professor Pierce	5		
F. W. Putnam	1	State Library	9
J. D. Runkle	1		
Ernest Schubert	1	<i>Detroit, Mich.</i>	
Mr. Sullivan	1		
Dr. Tuckerman	1	Michigan State Agricultural Society	9
A. E. Verrill	1	Messrs. Palmer, Gunn & Stearns	1
Professor J. E. Worcester	6	Dr. Zena Pitcher and A. B. Palmer	1
<i>Charleston, S. C.</i>		<i>Dorchester, Mass.</i>	
Elliott Society of Natural History	14		
Society Library	3	Dr. E. Jarvis	1
Dr. C. Happoldt	1		
Professor J. E. Holbrook	1	<i>East Greenwich, N. Y.</i>	
Wilmot De Saussure	1		
<i>Charlottesville, Va.</i>		Asa Fitch	1
University of Virginia	4	<i>Frankfort, Ky.</i>	
<i>Chicago, Ill.</i>			
Academy of Chicago	1	Geological Survey of Kentucky	5
Chicago Historical Society	1	State Library	2
Mechanics' Institute	4	<i>Gambier, Ohio.</i>	
Messrs. N. S. David and Byford	1		
Colonel J. D. Graham	1	Kenyon College	4
<i>Cincinnati, Ohio.</i>		<i>Georgetown, D. C.</i>	
American Medical College	1	Georgetown College	8
Historical and Philosophical Society of Ohio	2	Arthur Schott	2
Mercantile Library	4	<i>Hanover, N. H.</i>	
Observatory	3		
Professor Mitchell	1	Dartmouth College	5
Dr. Newton	1	Professor Young	1
<i>Columbia, Penn.</i>		<i>Harrisburg, Penn.</i>	
S. S. Haldeman	1	State Library	4
<i>Columbia, S. C.</i>		<i>Hartford, Conn.</i>	
South Carolina College	4		
State Library	2	Historical Society of Connecticut	2
<i>Columbus, Ohio.</i>		State Library	3
Ohio State Agricultural Society	25	Young Men's Institute	3
State Library	3	<i>Havana, Cuba.</i>	
Leo Lesquereux	1	Meteorological Observatory	1

D.—Addressed packages received by the Smithsonian Institution, &c.—Continued.

	Number of packages.		Number of packages.
<i>Hudson, Ohio.</i>		<i>Milledgeville, Ga.</i>	
Western Reserve College.....	5	State Library.....	1
<i>Indianapolis, Ind.</i>		<i>Montgomery, Ala.</i>	
Indiana Historical Society.....	1	State Library.....	2
State Library.....	3	<i>Montpelier, Vt.</i>	
<i>Iowa City, Iowa</i>		Historical and Antiquarian Society of Vermont.....	1
State University.....	29	State Library.....	3
<i>Jackson, Miss.</i>		<i>Montreal, C. E.</i>	
State Library.....	2	Natural History Society.....	1
<i>Janesville, Wis.</i>		Professor T. S. Hunt.....	1
State Institution for the Blind.....	1	Sir W. E. Logan.....	1
<i>Jefferson City, Mo.</i>		<i>Nashville, Tenn.</i>	
State Library.....	2	State Library.....	3
<i>Lansing, Mich.</i>		Professor Blackie.....	1
Michigan State Agricultural Society...	4	<i>New Brunswick, N. J.</i>	
State Library.....	3	Professor George H. Cook.....	5
<i>Lecompton, Kansas.</i>		<i>New Haven, Conn.</i>	
State Library.....	2	American Journal of Science.....	24
<i>Little Rock, Ark.</i>		American Oriental Society.....	10
State of Arkansas.....	9	Yale College.....	13
State Library.....	3	Professor J. D. Dana.....	24
University of Arkansas.....	3	Professor E. Loomis.....	6
<i>Louisville, Ky.</i>		Professor Silliman.....	15
Dr. Shotz.....	1	Professor W. D. Whitney.....	5
Professor J. L. Smith.....	1	<i>New Orleans, La.</i>	
<i>Madison, Wis.</i>		New Orleans Academy of Natural Sciences.....	25
Historical Society of Wisconsin.....	7	Dr. Bennet Dowler.....	1
State Library.....	3	<i>New York, N. Y.</i>	
Wisconsin State Agricultural Society..	17	American Ethnological Society.....	2
<i>McMinnville, Warren county, Tenn.</i>		American Geographical and Statisti- cal Society.....	38
C. F. Falconnet.....	1	American Institute.....	5
<i>Mexico, Mexico.</i>		Astor Library.....	3
Sociedad Mexicana de Geografia y Es- tadistica.....	2	Board of Education.....	1
		Historical Society.....	3
		Mercantile Library Association.....	4
		New York Journal of Pharmacy.....	1
		New York Lyceum of Natural History	39
		Norton's Literary Gazette.....	2

D.—Addressed packages received by the Smithsonian Institution, &c.—Continued.

	Number of packages.		Number of packages.
<i>New York, N. Y.—Continued.</i>		<i>Providence, R. I.</i>	
University Library	6	Brown University	4
J. Russell Bradford	1	Rhode Island Historical Society	2
W. Dornbach	1	State Library	1
Dr. Daniel Eaton	2	John Carter Brown	1
David Dudley Field	1		
Messrs. Frank & Norton	1	<i>Quebec, C. E.</i>	
Henry Grinnell	5	Observatory	2
M. Harlan	1		
J. P. Humaston	1	<i>Quincy, Ill.</i>	
Hon. William Marvin	1	Dr. John Ritter	1
Professor Redfield	1		
Dr. E. Robinson	1	<i>Raleigh, N. C.</i>	
E. G. Squier	2	State Library	2
Dr. John Torrey	2		
<i>Olympia, Washington.</i>		<i>Richmond, Va.</i>	
Territorial Library	2	Historical Society of Virginia	2
		State Library	2
<i>Omaha, Nebraska.</i>		<i>Rio Janeiro, Brazil.</i>	
Territorial Library	2	Inst. Hist. Geogr. of Brazil	3
		Nautical Observatory	1
<i>Philadelphia, Penn.</i>		<i>Rock Island, Ill.</i>	
Academy of Natural Sciences	77	Benjamin D. Walsh	1
American Philosophical Society	50		
Central High School	1	<i>Sacramento, Cal.</i>	
Franklin Institute	1	State Library	1
Geological Survey	2		
Historical Society of Pennsylvania	4	<i>St. Augustine, Fla.</i>	
Philadelphia Library Company	3	Historical Society of Florida	1
Wagner Free Institute	5		
W. G. Binney	1	<i>St. John's, N. B.</i>	
Mr. Cope	1	King's College	1
H. S. Cranner	1		
Dr. Robley Dunglison	1	<i>St. Louis, Mo.</i>	
Messrs. Gross & Richardson	1	Geological Survey of Missouri, (Co-	
Professor Haldeman	1	lumbia, Mo)	5
Isaac I. Hayes	1	St. Louis Academy of Sciences	56
Isaac Lea	8	University Library	4
Dr. John L. Leconte	2	Dr. George Bemays	1
Dr. Joseph Leidy	10	Dr. George Engelmann	4
William Sharswood	5	Messrs. Eginton & McPheeters	1
Professor Wagner	1	Dr. Adam Hammer	2
<i>Portland, Me.</i>		Mr. Leslie	1
Neal Dow, Mayor of Portland	2	Dr. S. Pollak	1
		Dr. B. F. Shumard	3
<i>Princeton, N. J.</i>			
College of New Jersey	1		
Professor Alexander	1		
Professor A. Guyot	2		

D.—Addressed packages received by the Smithsonian Institution, &c.—Continued.

	Number of packages.		Number of packages.
<i>St. Paul, Minn.</i>		<i>Utica, N. Y.</i>	
Historical Society of St. Paul	1	American Journal of Insanity	4
State Library	1		
<i>Salem, Mass.</i>		<i>Valdivia, Chile.</i>	
Essex Institute	2	Dr. Eugen Von Boeck	1
Professor King	1		
Professor Russell	1	<i>Valparaiso, Chile.</i>	
		Dr. Thomas A Reid	2
<i>San Francisco, Cal.</i>			
California Academy of Natural Sciences.	10	<i>Washington, D. C.</i>	
<i>Santiago, Chile.</i>		Congress Library	6
Observatorio Nacional de Santiago ...	2	National Institute	2
University Library	4	National Observatory	45
Professor Lobeck	1	Ordnance Bureau	3
Dr. Moestas	2	Secretary of War	2
		U. S. Boundary Commission	1
<i>Savannah, Ga.</i>		U. S. Coast Survey	10
Georgia Historical Society	2	U. S. Patent Office	67
		Colonel J. S. Abert	1
<i>Springfield, Ill.</i>		Professor A. D. Bache	25
State Library	2	W. P. Brown	1
Rev. Prof. Esbjörn	1	J. Ferguson	1
Rev. Fachtmann	1	Lieutenant Gilliss	6
		Dr. Charles Girard	2
<i>Springfield, Mass.</i>		Captain H. J. Hartstene	4
William Tully	1	Professor W. E. Jillson	1
		J. C. G. Kennedy	4
<i>Toronto, C. W.</i>		Lieutenant M. F. Maury	9
Canadian Institute	1	Baron Osten Sacken	1
Magnetical and Meteorological Obser- vatory	2	George W. Riggs	3
Trinity College	1	M. A. L. Rives	1
Professor Kingston	1	John A. Rockwell	1
		H. R. Schoolcraft	8
<i>Trenton, N. J.</i>		W. Stimpson	1
Geological Survey of New Jersey	1	Henry Ulke	1
State Library	2		
		<i>West Point, N. Y.</i>	
		U. S. Military Academy	1
		Professor Bailey	1
		Major Bowman	1
		<i>Worcester, Mass.</i>	
		American Antiquarian Society	7

Total of addresses

274

Total of parcels

1,406

MUSEUM AND COLLECTIONS.

Additions.—The receipts of specimens during 1861, as might have been expected, were decidedly inferior to those of 1860, although much of great interest to science has been added to the collection since the date of the last report. Several explorations which had been planned were, of necessity, abandoned, owing to various impediments and difficulties. Among these may be mentioned an exploration of the region about Devil's river, Texas, by Patrick Duffy, hospital steward, United States army; of Fort Churchill, by Lieutenant John Feilner, United States army; and of Lake Winnepeg, by Donald Gunn. These, it is hoped, however, are only deferred to be hereafter resumed and carried out under better auspices.

No government expeditions have furnished any collections during 1861, excepting the Northwestern Boundary Commission, and their collections were all made in 1860, only arriving in 1861. All the rest were derived from resident correspondents of the Institution, or from gentlemen making explorations in the field in its behalf. A full list of all such receipts is given herewith, to which I would refer for particulars.

In addition to the operations of Mr. Xantus, Mr. Kennicott, and officers of the Hudson's Bay Company, mentioned specially hereafter, I may state that important contributions to our knowledge of the regions adjacent to the United States have been furnished by Mr. Charles Wright, from Cuba; Mr. W. Thomas March, of Jamaica, and Dr. Sartorius, of Mexico.

Very valuable collections of type specimens have been received from Dr. Hartlaub, of the Bremen museum; Drs. Reinhardt and Steenstrup, of the Copenhagen museum; Mr. P. L. Sclater, of London; the Messrs. Verreaux, of Paris; and Professor Agassiz, of the Cambridge museum.

The following are the explorations during the year from which the largest results have been received:

EXPLORATIONS.

Exploration of Cape St. Lucas and the Gulf of California, by Mr. John Xantus.—In the two last reports reference was made to that exploration following one of the region about Fort Tejon, California, by the same gentleman. I have now to report that the series of tidal and other observations made for the Coast Survey having been completed by Mr. Xantus, he has left Cape St. Lucas and returned to the east. The whole of the collections made by him have not yet arrived, but enough has been received during 1861, in continuation of previous years, to exhibit the ability and industry of Mr. Xantus as a naturalist. Over sixty boxes, some of large size, with contents embracing (and almost exhausting) every department of natural history, prepared and packed in a perfect manner, accompanied by numerous measurements, notes, and biographies, and all made in the intervals

of regular scientific duty, abundantly verify this estimate of Mr. Xantus's abilities.

In addition to the thorough exploration of the region immediately round Cape St. Lucas and the mountains in the vicinity, Mr. Xantus, since his residence there, has pushed his examinations many leagues up the coast, both on the ocean and gulf sides, and directly or indirectly extended them to a number of the islands, as Socorro, Tres Marias, &c. He also made a visit to Mazatlan during the past spring, and secured a valuable collection of birds.

The many new species collected by Mr. Xantus are in process of elaboration and will shortly be published. Partial reports have already been made on the birds by Mr. Xantus himself; on the reptiles by Mr. Cope; on the fishes by Mr. Gill; on the insects by Dr. Le Conte; on the crustacea and asteriadae by Mr. Stimpson; on the ophiuridae by Mr. Lyman; on the myriapoda by Mr. Wood; on the bats by Dr. Allen; on the plants by Dr. Gray, &c. The rich conchological materials are in the hands of Mr. P. P. Carpenter. It is proposed when all these examinations are completed to combine them in one general memoir, on the natural history of the cape, which will then be as well or even better known than the extremity of the corresponding peninsula of Florida, equally included in the limits of the North American fauna and flora.

Exploration of the Hudson's Bay territory by Mr. Kennicott.—At the date of the last advices from Mr. Kennicott, when the Smithsonian Report for 1860 was presented, he was at Fort Resolution, on Slave lake, where he had spent the preceding spring and summer, principally in collecting eggs of birds. He left Fort Resolution in August, 1860, and returned to Fort Simpson and proceeded immediately down the Mackenzie to Peels river. From Peels river he crossed the Rocky mountains to La Pierre's house, occupying four days in the transit, and arriving September 18th; left the next day for Fort Yukon, at the junction of Porcupine or Rat river and the Yukon or Pelly river, in about latitude 65° and longitude 146° . Fort Yukon, the terminus of his journey, was reached on the 28th of September, 1860.

The latest advices now on file from Mr. Kennicott were written January 2, 1861, up to which time he had made some interesting collections; but these, of course, were limited by the season. He had great expectations of success during the following spring, (of 1861,) which have no doubt been abundantly realized.

No collections were received from Mr. Kennicott in 1861, with the exception of a few specimens gathered in July and August, 1860, on Slave lake. Those made at the Yukon will, however, in all probability come to hand in October or November of 1862.

Mr. Kennicott expected to remain at the Yukon until August, 1861, then to start for La Pierre House and Fort Good Hope, possibly to Fort Simpson, to spend some months, and endeavor by early spring to reach Fort Anderson, near the mouth of Anderson river, (a stream between the Mackenzie and Coppermine rivers,) and in the barren grounds close to the Arctic ocean. At Fort Anderson he expected to

collect largely of the skins and eggs of birds, rare mammals, &c., and to return to Fort Simpson in the autumn, (of 1862,) then to arrive at Fort Chipewyan, on Lake Athabasca, by the spring of 1863, so as to get back to the United States by the winter of the same year.

For a notice of the continued aid to Mr. Kennicott, rendered by the gentlemen of the Hudson's Bay Company, I have to refer to the next division of my report.

Exploration of the Hudson's Bay territory by officers of the Hudson's Bay Company.—The gentlemen of many of the Hudson Bay Company's posts have largely extended their important contributions to science, referred to in the preceding report. A large proportion of the principal stations have thus furnished collections of specimens and meteorological observations of the highest value, which, taken in connexion with what Mr. Kennicott is doing, bid fair to make the Arctic natural history and physical geography of America as well known as that of the United States.

Pre-eminent among these valued collaborators of the Institution is Mr. Bernard R. Ross, chief factor of the Mackenzie River district, and resident at Fort Simpson. Reference was made in former reports to his contributions in previous years; those sent in 1861 are in no way behind the others, embracing numbers of skins of birds and mammals, some of great variety, insects, &c., besides very large series of specimens illustrating the manners and customs of the Esquimaux and various Indian tribes. Mr. Ross has also deposited some relics of Sir John Franklin, consisting of a gun used by him in his first expedition, and a sword belonging to the last one, and obtained from the Esquimaux. Mr. Ross is at present engaged in a series of investigations upon the tribes of the north, to be published whenever sufficiently complete, and illustrated by numerous photographic drawings.

In making up his transmissions to the Institution Mr. Ross has had the co-operation of nearly all the gentlemen resident at the different posts in his district, their contributions being of great value. Among them may be mentioned Mr. James Lockhart, Mr. William Hardisty, Mr. J. S. Onion, Mr. John Reed, Mr. N. Taylor, Mr. C. P. Gaudet, Mr. James Flett, Mr. A. McKenzie, Mr. A. Beaulieu, &c.

Second in magnitude only to those of Mr. Ross are the contributions of Mr. Lawrence Clarke, jr., of Fort Rae, on Slave lake, consisting of many mammals, nearly complete sets of the water fowl, and other birds of the north side of the lake, with the eggs of many of them, such as the black-throated diver, the trumpeter swan, &c.

Other contributions have been received from Mr. R. Campbell, of Athabasca; Mr. James McKenzie, of Moose Factory; Mr. Gladmon, of Rupert House; Mr. James Anderson, (a) of Mingan; Mr. George Barnston, of Lake Superior; and Mr. Connolly, of Rigolette. Mr. McKenzie furnished a large box of birds of Hudson's Bay, while from Mr. Barnston were received several collections of skins, and eggs of birds, new and rare mammals, insects, fish, &c., of Lake Superior.

It may be proper to state in this connexion that the labors of Mr.

Kennicott have been facilitated to the highest degree by the liberality of the Hudson's Bay Company, as exercised by the directors in London, the executive officers in Montreal, (especially Mr. Edward Hopkins,) and all the gentlemen of the company, in particular by Governor Mactavish, of Fort Garry, and Mr. Ross. In fact, without this aid the expense of Mr. Kennicott's exploration would be far beyond what the Institution could afford, even with the assistance received from others. Wherever the rules of the company would admit, no charge has been made for transportation of Mr. Kennicott and his supplies and collections, and he has been entertained as a guest wherever he has gone. No charge also was made on the collection sent from Moose Factory to London by the company's ship, and in every possible way this time-honored company has shown itself friendly and co-operative in the highest degree to the scientific objects of the Institution.

Northwest Boundary Survey, under Mr. Archibald Campbell.—This expedition has finally completed its labors in the field and returned to Washington, bringing rich results in physical science, as well as important collections in natural history. These, with what were previously sent hither from time to time, are in progress of elaboration, and reports are in preparation to be presented to Congress when completed.

It is with deep regret that I have to announce the death at sea, on his homeward voyage in February last, of Dr. C. B. Kennerly, the surgeon and naturalist of the Boundary Survey. Connected with this expedition from its beginning, in 1857, and, in conjunction with Mr. Gibbs, making the principal portion of its collections, his report on them would have been one of great value. For many years prior to 1857, however, he had been in intimate relations with the Institution as a collaborator, first while resident at his home, at White Post, Clark county, Virginia, then in 1853, as surgeon and naturalist to the Pacific Railroad Survey of Captain Whipple along the 35th parallel, then in the same relationship to the Mexican Boundary Survey, under Colonel Emory, in 1855. No one of the gentlemen who have labored so zealously to extend a knowledge of the natural history of the west within the last ten or twelve years has been more successful than Dr. Kennerly. Many new species have been first described by himself or from his collections, while his contributions to the biography of American animals have been of the highest interest.

IDENTIFICATION OF SPECIMENS.

The identification of the unnamed species in the Smithsonian collection has been carried on as rapidly as possible, with the co-operation of many naturalists of distinction. Some of it has been prosecuted within the building; most of it, however, by gentlemen who either came to Washington and made their selections or had specimens sent to them. The following persons may be specially mentioned in connexion with the several portions of the collection:

Mammals.—The monkeys and South American mammals generally have been studied by Dr. J. H. Slack, and the bats by Dr. H. Allen, both of Philadelphia. Several species not previously described have been found among them by these gentlemen.

Birds.—Mr. Cassin has continued his examinations of the South American birds. Mr. Elliot Coues has monographed the North American *Tringæ*, or sandpipers; the *Laridæ*, or gulls; the *Colymbidæ*, or divers, and the *Aegiothi*, or pine finches. Several of these have already been published. Dr. Bryant has examined the *Guillemots* and large hawks, and Mr. Lawrence has identified the humming-birds.

Reptiles.—Mr. E. D. Cope has studied the exotic reptiles generally, and has had special reference to those from South America, Mexico, and the West Indies. Many new species have been described by him from the Smithsonian specimens. Professor Agassiz has not yet returned the Smithsonian collection of turtles.

Fishes.—Professor Agassiz has still in hand the Exploring Expedition fishes, a collection of nearly one thousand species. Mr. Alexander Agassiz has examined the Smithsonian *Embiotocoids*, or viviparous fishes of California. Mr. F. W. Putnam has completed the study of the *Etheostomoids*, and entered on that of the *Cottoids*. Several other important families have been sent to the Museum of Comparative Zoology, for investigation by students of Professor Agassiz. Mr. Gill has made particular study of the west coast fishes, and those collected at Cape St. Lucas by Mr. Xantus.

Crustacea.—Mr. Ordway has examined several groups of the crustacea, and others have been studied by Mr. Stimpson.

Radiates.—Mr. Stimpson has finished the study of the *Asteriades*, and Professor Agassiz has had in hand other of the star fishes. Mr. Verrill has made a detailed examination of all the corals.

Mollusks.—Mr. P. P. Carpenter has had in his hands for investigation, aided by Dr. Alcock, all the shells of the west coast of America, and many of the exotic collections. Certain marine families have been sent to Professor Agassiz. Mr. Isaac Lea has named all the *Unionidæ*. Mr. Binney has taken charge of the land and fresh-water *Univalves*; Mr. Bush has the *Polyzoa*. The *Cephalopods* have all been sent to Dr. Steenstrup, of Copenhagen, for a report.

Insects.—Dr. Le Conte and Mr. Ulke have examined the North American *Coleoptera*; Baron Osten Sacken and Dr. Loew the *Diptera*; Dr. Hagen the *Neuroptera*; Mr. Edwards and Drs. Morris and Clemens the *Lepidoptera*, and Mr. Uhler the *Hemiptera*.

Fossils.—Dr. Newberry has studied many of the fossil plants. Mr. Meek, aided by Dr. Hayden, has identified all the fossils collected by the latter gentleman. Dr. Gabb, of Philadelphia, has investigated a number of the tertiary and cretaceous shells.

Rocks and Minerals.—Mr. Thomas Egleston, jr., has been engaged

for several months in the determining and arranging of the minerals and rocks of the collection, aided in a portion of the labor relating to the latter work by Dr. Newberry and Mr. Gibbs.

Plants.—The plants have been in the hands of Drs. Torrey and Gray and Mr. Eaton, who are making much progress in the labor of selecting and labelling a complete series.

Results of many of the above investigations have already been published, others are nearly completed, while some will require a considerable time to complete. All, however, when presented to the world, are announced as being based upon the Smithsonian material, while the greater portion either have been or will be published by the Smithsonian Institution, as detailed in your report.

All the specimens thus submitted to examination are carefully labelled, and the duplicates set aside to be distributed as types to the institutions having strongest claims to them. As the work progresses the amount of material available for such distribution increases, and new collections are more readily used to a similar end.

The labor of cataloguing and registering the specimens has been continued as rapidly as other duties would allow, the result at the end of the year being stated in the annexed table. In this I have been much assisted by the gentlemen named above, as well as in addition by Mr. John M. Woodworth, Mr. W. Prentiss, Mr. R. B. Hitz, and Mr. Fitzgerald.

DISTRIBUTION OF SPECIMENS.

The distribution of specimens has been carried on very largely during the year. About fifty sets of duplicate shells of the United States Exploring Expedition have been sent to as many institutions, while large numbers of species in all classes of the animal kingdom have also been supplied. A rough estimate gives 40,000 species and 80,000 specimens of natural history as thus distributed up to date, while many more are nearly in readiness. When it is considered that all these have been named and labelled by naturalists admitted to be of the highest authority in their respective departments, and that all have thereby the character and value of types, many of them belonging to species first described from Smithsonian specimens, or serving as the materials of elaborate monographs, it will be readily understood how much their systematic and judicious distribution by the Institution all over the world must conduce to the advancement of science.

WORK DONE IN THE MUSEUM.

Good progress has been made during the year in the proper arrangement and labelling of the specimens in the museum hall. Many of the shelves have been edged with black strips, and many stands whitened and renewed. Additional cases have been erected at the east end of the hall for the accommodation of the large birds which crowded inconveniently those already filled. A number of floor cases have been constructed to receive the large collection of shells.

Much labor has been expended on the identification and labelling of the exotic birds, but this work is now nearly finished. When, in accordance with the plan, these, as well as all the other specimens in the hall, are accurately and legibly labelled, with both their scientific and vernacular names, the gratification of the public in examining the rich treasures of the museum will be greatly enhanced.

Table exhibiting the total number of entries on the record books of the Smithsonian collection at the end of each year from 1851 to 1861, inclusive.

	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
Skeletons and skulls....	911	1,074	1,190	1,275	2,050	3,060	3,340	3,413	3,650	4,350	4,459
Mammals.....		114	198	351	1,200	2,046	3,200	3,226	3,750	4,575	5,550
Birds.....				4,353	4,425	5,855	8,766	11,390	15,913	20,875	23,510
Reptiles.....						106	239	4,370	4,616	4,683	6,088
Fishes.....						155	613	1,136	1,740	2,975	3,643
Eggs of birds.....								1,032	2,525	4,425	4,830
Crustacea.....								939	939	979	1,287
Mollusks.....									2,000	8,832	9,718
Radiates.....									1,100	1,308	1,800
Fossils.....									171	705	1,031
Minerals.....									793	1,132	3,500
Ethnological specimens.....										550	550
Annilids.....											109
Total.....	911	1,188	1,388	5,979	7,675	11,222	16,158	25,506	37,197	55,389	66,075

Entries during 1861, 10,686.

LIST OF DONATIONS TO THE MUSEUM IN 1861.

- Akhurst, J.*—Mammals from Bogota.
Allen, W. T.—Eggs of birds from Virginia.
Ambrose, Rev. J.—Skin of *Mergulus alle*.
Anderson, (a) James.—Wolf-fish from the Gulf of St. Lawrence.
Austin, J. B.—*Menobranchus*, from Chicago.
Backus, Miss Julia E.—Australian boomerang.
Baird, S. F.—Four boxes minerals and rocks, of Essex county, New York, and one bottle *Coregonus* of Lake Champlain.
Baird, W. M.—*Sigillaria*, from Schuylkill county, Pennsylvania.
Barnston, George.—Horns of caribou, skins of mammals and birds, skeletons, nests and eggs, insects, &c. Lake Superior.
Beadle, D. W.—Fishes from Canada West.
Beaulieu, A.—Skins of birds, &c., McKenzie river. (Through B. R. Ross.)
Bishop, F. A.—Soils and earths collected in Utah. (Through Department of Interior.)
Boardman, G. A.—Skins and eggs of birds of New Brunswick.
Boettner, Gustav A.—Insects, &c., of Kansas.
Boyle, P. F.—Chicken with four legs.
Brandt, Henry.—Mammals, birds and eggs of Kansas.
Bremen Museum.—Five mounted Arctic birds, and skull of European brown bear.
Brevoort, J. C.—Mammals from Central America.
Brewer, Dr. T. M.—Nest of eggs of *Helminthophaga ruficapilla*.

- British Government*.—Fragment of meteorite from India.
- Bryant, Dr. H.*—Skins and eggs of birds.
- Buckner, Rev. H.*—Bitumen from the Cherokee nation.
- Burling, William*.—Skin canoe or cayak, and skin dress of Indians of N. W. America, (through J. W. Raymond.)
- Cambridge, Museum of Comparative Zoology*.—Eight species embiotocoids of California, and seven of ophiurans.
- Campbell, Archibald*.—Collections of animals, plants, rocks, &c., made by Dr. C. B. Kennerly and Mr. George Gibbs, naturalists and geologists of the northwest boundary survey.
- Campbell, R.*—Skins of mammals from the Hudson's Bay Territory.
- Canfield, Dr. C. S.*—Shells of the coast of California.
- Chambliss, S. O.*—Crystallized quartz from North Carolina.
- Clarke, jr., Lawrence*.—Very large collections of mammals, birds, eggs, &c., of Slave lake.
- Conradsen, R.*—Eggs of *Fulix marila*, Iceland.
- Cooper, Dr. J. G.*—Birds' eggs from Rocky mountains.
- Copenhagen, Royal Museum*.—Skins of Arctic birds: Echinoderms, &c.
- Couper, W.*—Skins of ducks and of *Saxicola œnanthe* from Quebec.
- Dawson, Professor J. W.*—Pleistocene and Devonian fossils of Canada.
- Dodd, P. W.*—Skins and eggs of birds, &c., of Sable island.
- Flett, Jas.*—Birds, &c., from La Pierre House, H. B. T. (through B. R. Ross.)
- Foreman, Dr. E.*—Minerals, rocks, animal tracks, &c., from near Emmetsburg, Maryland.
- Fuller, Mr.*—Shells of the coast of Maine.
- Gaudet, C. P.*—Birds, &c., from Peel's river, H. B. T., (through B. R. Ross.)
- Gibbs, George*.—See *Archibald Campbell*.
- Gilliss, Captain J. M.*—Eight bottles alcoholic specimens from Atlantic ocean.
- Gilpin, Dr. J. B.*—Skins of mammals of Nova Scotia.
- Gladmon, Mr.*—Nests and eggs from Hudson's Bay.
- Gould, C. L.*—Sea birds in the flesh, and in skins, from the coast of Maine.
- Gove, Captain*.—Eggs of birds from Utah.
- Greenwood, Mrs.*—Specimens of algae from the coast of Massachusetts.
- Greenwood, Thomas L.*—Nests and eggs of birds.
- Gruber, F.*—Skins and eggs of birds of California.
- Hardisty, W. L.*—Mammals, birds, &c., from Fort Liard on the Yukon, (through B. R. Ross.)
- Haymond, Dr. R.*—Nest and eggs of *Mniotilta*.
- Heerman, Dr. A. L.*—Skins and eggs of North American birds.
- Hewett, Dr. Thomas*.—Two mounted ducks.
- Hitz, R. B.*—Nests and eggs of birds of Pennsylvania.
- Holder, Dr. J. B.*—Eggs of birds from the Tortugas.
- Holt, Hon. Jos.*—Chameleon, centipede, &c., from Jerusalem.
- Kautz, Captain A. V.*—Skins of salmon of Puget Sound.
- Kellogg, F.*—Eggs of birds from Texas.

Kennerly, Dr. C. B. R.—See *Archibald Campbell*.

Kennicott, Robert.—Zoological specimens, plants, &c., from Great Slave lake.

Kirtland, Prof. J. P.—Living *Nerodia erythrogaster*, or red bellied water snake, from Ohio.

Krider, J.—Mounted tanager, egg of *Nauclerus furcatus*, or swallow-tailed hawk, skins of birds.

Laszlo, Ch.—Nest, eggs, and bird of *Saurophagus derbyanus*, Mexico.

Lazar, Count Coloman.—Skins and eggs of birds of Hungary.

Lincoln, E. D.—Box of eggs from Massachusetts.

Lockhart, James.—Mammals, &c., from the Yukon, (through B. R. Ross.)

Loweree, R. G.—Reptiles from Gaudalaxara, Mexico.

MacFarlane, R.—Birds, &c., from Fort Good Hope, H. B. T., (through B. R. Ross.)

McKenzie, A.—Birds, mammals, &c., from Liard river, H. B. T., (through B. R. Ross.)

Major, J. J.—Reptiles from Gaudalaxara, Mexico.

March, W. Thos.—125 skins of birds of Jamaica.

Maximilian, Prince of Wied.—Skins of European mammals.

Mowry, Lieut. Sylvester.—Skeleton of camel died in California.

Newberry, Dr. J. S.—Mammals from Lake Superior.

Onion, J. S.—Plants from the Mackenzie river, (through B. R. Ross.)

Otis, G. N.—Specimens of *Helix pulchella*.

Page, Capt. T. J.—Fossil wood from Buenos Ayres, and specimens of the materia medica of Paraguay.

Parkinson, D. F.—Box of birds of North California.

Poey, Prof. F.—Types of new species of Cuban fishes.

Prentiss, Wesley.—Skins of birds.

Prince, Miss S.—Annelid from the coast of Maine.

Raymond, J. W.—See *Burling*.

Reid, J.—Skins of mammals and birds, &c., from Great Slave lake.

Repetti, A.—Fossil fishes from Monte Bolca.

Reynolds, Henry.—Minerals, shells, &c., of Maine.

Ross, B. R.—Very full collections of the animals, plants, eggs, ethnological curiosities, &c., of the Mackenzie's river region of Arctic America.

Ross, Mrs. Christina.—Insects, curiosities, &c., from Mackenzie's river, (through B. R. Ross.)

St. Charles College, La.—Reptiles, eggs, &c., of Louisiana.

Samuels, E.—Microscopic slides.

Sartorius, Dr. C.—Birds, mammals, reptiles, and insects, from near Vera Cruz.

Savage, Dr. Thos. L.—Reptiles of Mississippi.

Scott, Mrs. Dr.—*Hippocampus*, or sea-horse, from Rappahannock river.

Smith, Mrs.—Skin and nest of *Emipidonax acadicus*.

Smith, Jas. E.—Two serpents, *Rhinostoma*.

Smith, Dr. N. H.—Skin of Albino blackbird.

Starbuck, Alex.—Shells, &c., of Massachusetts.

Starkey, J. S.—Silver ores from Oregon.

Sternbergh, J. H.—Alcoholic specimens from Panama.

Stone, H.—Eggs of birds.

Taylor, A. S.—Insects, shells, &c., of coast of California.

Taylor, N.—Birds, &c., from Fort Norman, H. B. T., (through B. R. Ross.)

Vanderweyck, P. H.—Minerals from Manhattan island, N. Y.

Vuille, Wm.—Skins and eggs of birds, Siskiyon county, California.

Ward, Prof.—Cast of skull of *Ursus spelaeus* from the Cavern of Iserlohn, Germany.

Willis, J. R.—Mounted ptarmigan from Newfoundland, and specimens of natural history of Nova Scotia.

Winston, W. G.—Skins and eggs of birds of Nova Scotia.

Wood, W. S.—Eggs of birds.

Worthen, Prof. A. H.—Tertiary fossils of Mississippi.

Wright, Chas.—Birds, shells, reptiles, &c., of Cuba.

Xantus, J.—Large collections of animals, plants, fossils, minerals, eggs of birds, &c., of Cape St. Lucas; and skins of birds, &c., from the Three Maria's islands and the vicinity of Mazatlan; skins and eggs of birds from the Farralone islands.

LIST OF SMITHSONIAN PUBLICATIONS DURING 1861.

Classification of the Coleoptera of North America. Prepared for the Smithsonian Institution by John L. Le Conte, M. D. 8vo. pp. 302, and 47 wood cuts. Pp. 1-208; published May, 1861; 209-278, March, 1862.

Synopsis of the described Neuroptera of North America, with a list of the South American species. Prepared for the Smithsonian Institution by Hermann Hagen. July, 1861. 8vo. pp. 368.

Extracts from the proceedings of the Board of Regents of the Smithsonian Institution in relation to the electro-magnetic telegraph. (Reprinted from proceedings of the Board of Regents for 1857.) 8vo. pp. 40.

Annual Report of the Board of Regents of the Smithsonian Institution, showing the operations, expenditures, and condition of the Institution for the year 1860. 1 volume, 8vo., pp. 448; seventy-two wood cuts.

LIST OF LECTURES.

The following lectures have been delivered during the months of January, February, March, and April, 1862:

Two lectures by Rev. H. W. Pierson, president of Cumberland College, Kentucky, on "The private life of Thomas Jefferson."

One lecture by Professor A. Ten Brook, late United States consul at Munich, on the celebrated religious exhibition in the Bavarian Highlands, called the "Drama of the Passion," the only relic of the kind which has reached us from the middle ages.

Four lectures by Dr. I. I. Hayes, of Philadelphia, on "Arctic Explorations," with an account of his recent expedition.

One lecture by Rev. J. C. Richmond, of Milwaukee, Wisconsin, on "The origin and Saxon strength of the English tongue."

One lecture by Rev. W. A. P. Martin, a missionary, on "China and the Chinese."

One lecture by Rev. A. Cleveland Coxe, of Baltimore, Maryland, on "Popular taste in art and literature."

Three lectures by Professor Fairman Rogers, of Philadelphia, on "The Glaciers."

Three lectures by Rev. Francis Vinton, of New York, on "The Gentleman," "The Philosophy of War," and "Italy and Dante."

LIST OF METEOROLOGICAL STATIONS AND OBSERVERS

OF THE

SMITHSONIAN INSTITUTION

FOR THE YEAR 1861.

BRITISH AMERICA.

Name of observer.	Station.	North latitude.	West longitude.	Height.	Instruments.*	No. of months received.
		° /	° /	Feet.		
Acadia College.....	Wolfville, Nova Scotia.....	45 06	64 25	95	A	9
Baker, J. C.....	Stanbridge, Canada East	45 08	73 00	.....	T	11
Clarke, Mrs. Lawrence, jr.	Fort Rae, Great Slave Lake.....	.....	.....	.....	T	3
Craigie, Dr. W.....	Hamilton, Canada West.....	43 15	79 57	.....	B. T.....	12
Delaney, Edward M. J...	Colonial Building, St. John's, Newfoundland.	47 35	52 40	170	B. T. R..	12
Gunn, Donald.....	Red River Settlement, Hudson's Bay Territory.	50 06	97 00	853	T. R	6
Hall, Archibald, M. D....	Montreal, Canada East.....	45 30	73 36	57	A	11
Hensley, Rev. J. M.....	King's College, Windsor, Nova Scotia.	44 59	64 07	200	A	6
Magnetic Observatory...	Toronto, Canada West.....	43 39	79 21	†108	A	12
Mackenzie, John.....	Moose Factory, Hudson's Bay Territory.	51 15	80 45	.....	B. T. R..	12
Phillips, H	Niagara, Canada West.....	43 09	79 20	270	A	8
Rankin, Colin.....	Michipicoton, Canada West.....	47 50	85 05	.....	T	10
Richards, Thomas.....	Kenogumissiee, Hudson's Bay Territory.	49 50	84 00	1,000?	T	5
Ross, Bernard R.....	Fort Simpson, Hudson's Bay Territory.	61 51	121 25	.....	T	3
Royal Engineers.....	Meteorological Observatory, Halifax, Nova Scotia.	44 39	63 37	8	A	2
Smallwood, Dr. Charles..	St. Martin, Isle Jesus, Canada E..	45 32	73 36	118	A	12

ALABAMA.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Shackelford, Prof. Josephus	Moulton.....	Lawrence	34 37	87 25	643	A	4
Tutwiler, Henry	Havana	Greene	32 50	87 46	500	T. R.....	2
Waller, Robert B.....	Greensboro' ...	Greene	32 40	87 34	350	A	4

* A signifies Barometer, Thermometer, Psychrometer, and Rain Gauge.
 B signifies Barometer.
 T signifies Thermometer.

P signifies Psychrometer.
 R signifies Rain Gauge.
 N signifies No instrument.
 † Above Lake Ontario.

ARKANSAS.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Blackwell, W. H.	Perryville	Perry	35 05	93 16	.....	N	3
Graham, Paul.	Bentonville	Benton	36 23	94 10	1,790	N	5
Howard, J. S.	Mountain Home	Marion	36 30	92 30	.....	N	3
Moore, Alex. P., M. D.	Washington ...	Hempstead	33 39	93 45	.....	T. P. R..	1
Smith, Dr. Nathan D.	Washington ...	Hempstead	33 44	93 41	.....	T. R.	4

CALIFORNIA.

Ayres, W. O., M. D.	San Francisco.	San Francisco.	37 48	122 27	130	A	12
Belcher, W. C.	Marysville....	Yuba	39 29	121 30	80	B. T. R..	4
Blakeslee, Rev. S. V.	Folsom	Sacramento ...	.....	.....	.....	T. R.	8
Boucher, Wesley K.	Mokelumne Hill	Calaveras	38 18	120 28	1,502	N.	3
Dunkum, Mrs. E. S.	Honcut	Yuba	39 25	121 30	.....	T. R.	12
Frambes, Prof. Oliver S. ...	Santa Clara ...	Santa Clara ...	37 18	122 00	100	A	3
Logan, Thomas M., M. D. ..	Sacramento ...	Sacramento ...	38 35	128 28	41	A	12
Whitlock, James H.	Meadow Valley	Plumas	40 20	120 15	3,700	B. T. R..	11

CHEROKEE NATION.

Hitchcock, Isaac B.	Lee's Creek. ...	Sequohyah				T	2
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COLORADO.

Ellis, Dr. Wm. T.	Mountain City.	Arapahoe	39 35	105 40	8,000	T.	10
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DISTRICT OF COLUMBIA.

MacKee, Rev. C. B.	Georgetown ...	Washington ...	38 54	77 03		T. R.	12
Smithsonian Institution ...	Washington ...	Washington ...	38 53	77 01	60	A	12

CONNECTICUT.

Case, Jarvis	Canton	Hartford	42 00	73 00	700	T. R.	1
Harrison, Benjamin F.	Wallingford	New Haven ...	41 27	72 50	133	A	12
Hunt, Rev. Daniel	Pomfret	Windham	41 52	72 23	587	A	12
Johnston, Prof. John	Middletown ...	Middlesex	41 32	72 39	175	A	12
Rankin, James	Saybrook	Middlesex	41 18	72 20	10	T. R.	6
Rockwell, Charlotte	Colebrook	Litchfield	42 00	73 06	.....	T	12
Yeomans, William H.	Columbia	Tolland	41 40	72 42		T	12

DAKOTA.

Norvell, Freeman	Greenwood		42 52	98 24	1,900	T. R.	5
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FLORIDA.

Allen, George D.	Magnetic Observatory, Key West.	Monroe	24 33	81 48	6	B. T. P..	12
Ferguson, G. F.							
Oltmanns, J. G.							
Bailey, James B.	Gainesville	Alachua	29 35	82 26	184	T. R.	2
Dennis, William C.	Key West	Monroe	24 33	81 28	16	B. T. R..	5
Steele, Judge Augustus	Atsena Otie	Levy	29 08	83 04	17	B. T. R..	3
Whitner, Benjamin F.	Tallahassee	Leon	30 24	84 17	70	T	4

GEORGIA.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Blewitt, Rev. W.....	Baston	Thomas	31 00	84 00	.....	T. R.....	2
Camp, Benjamin F.....	Covington	Newton	33 40	84 00	763	N.....	4
Gibson, R. T.....	Savannah	Chatham	32 02	81 01	18	T. R.....	4
McAfee, J. R., M. D.....	Dalton	Whitfield	34 50	85 00	775	B. T. R..	3
Pendleton, E. M., M. D....	Sparta	Hancock	33 17	83 09	550	T. R.....	4
Van Buren, Jarvis.....	Clarksville	Habersham	34 35	83 31	1,632	T. P.....	4

ILLINOIS.

Aldrich, Verry.....	Tiskilwa	Bureau.....	41 15	89 66	550	N.....	12
Allison, Jesse.....	Bloomington...	McLean	40 30	89 00	.....	N.....	7
Armstrong, M. C.....	Chicago	Cook .....	.....	.....	.....	B. T.....	5
Roe, James H.....							
Babcock, Andrew J.	Aurora	Kane.....	41 41	88 17	650	T. R.....	2
Babcock, E.....	Riley	McHenry.....	42 11	88 20	760	T. R.....	12
Bacon, E. E.....	Willow Creek..	Lee	41 45	88 56	1,040	T.....	7
Ballou, N. E., M. D.	Sandwich	De Kalb	41 31	88 30	575	T. R.....	12
Bandeher, Adolphus F., jr.	Highland	Madison.....	38 45	89 46	.....	B. T.....	11
Bassett, George R.....	Woodstock	McHenry.....	42 18	88 30	.....	T. R.....	3
Boettner, Gustav A.....	Chicago	Cook	41 54	89 40	.....	B. T.....	4
Bowman, Dr. E. H.....	Edgington	Rock Island ...	41 25	90 46	686	T. R.....	6
Breed, M. A.....	Peoria.....	Peoria.....	40 38	89 46	512	T. R.....	12
Brendel, Frederick, M. D..	Peoria.....	Peoria.....	40 43	89 30	460	A.....	12
Brookes, Samuel.....	Chicago	Cook	42 00	87 30	.....	T.....	12
Cobleigh, Rev. Nels. E., D.D	Lebanon.....	St. Clair.....	38 37	89 56	500	B. T. R..	12
Collier, Prof. Geo. H.	Wheaton	Du Page.....	41 49	88 06	682	A.....	8
Crandon, Frank.....	Batavia	Kane.....	41 52	88 20	636	T.....	1
Dudley, Timothy.....	Jacksonville ...	Morgan	39 30	90 06	.....	T. R.....	12
Fitch, Dr. Joseph	Channahon....	Will.....	41 15	88 16	.....	B. T.....	4
Grant, John.....	Manchester....	Scott.....	39 33	90 34	683	A.....	12
Harris, J. O., M. D.....	Ottawa.....	La Salle	41 20	88 47	500	T. R.....	12
Little, J. Thomas.....	Dixon	Lee	41 45	89 31	.....	N.....	12
Livingston, Prof. Wm.....	Galesburg.....	Knox.....	.....	.....	.....	A.....	11
Mead, S. B., M. D.....	Augusta.....	Hancock	40 10	91 00	*203	T. P. R..	12
Mead, Dr. Thompson.....	Batavia.....	Kane	41 52	88 20	636	A.....	2
Meeker, Ralph E.....	Dongola....	Union	37 26	89 21	.....	T.....	9
Newcomb, John B.....	Elgin.....	Kane	42 00	88 15	777	A.....	3
Olds, Warren.....	Albany	Whiteside....	41 40	90 16	600	N.....	12
Pashley, J. S., M. D.....	Osceola	Stark	41 16	90 17	.....	T. R.....	5
Patrick, Dr. John J.	Bellville.	St. Clair.....	38 29	90 06	600	B. T.....	6
Riblet, J. H.....	Pekin	Tazewell.....	40 36	89 45	.....	T. R.....	12
Rogers, O. P. and J. S....	Marengo.....	McHenry.....	42 14	88 38	842	B. T. R..	12
Tolman, James W.....	Winnebago Depot.	Winnebago	42 17	89 12	900	B. T. R..	12
Tribble, Mrs. Anna C.....	Upper Alton...	Madison	39 00	89 36	.....	A.....	2

* Above low water mark at Quincy.

INDIANA.

Anderson, H. H.....	Rockville.....	Parke.....	36 00	87 00	1,100	N.....	1
Austin, W. W.....	Richmond	Wayne.....	39 47	84 47	800	T.....	5
Bartlett, Isaac.....	Logansport	Cass	40 45	86 13	600	T. R.....	6
Bullock, J. T.....	Shelbyville	Shelby.....	39 00	87 00	.....	N.....	8
Chappellsmith, John	New Harmony..	Posey	38 08	87 50	320	A.....	12
Dawson, William	Cadiz	Henry.....	39 55	85 20	1,060	T. R.....	12
Dayton, James H.	South Bend....	St. Joseph....	41 39	86 07	600	N.....	12
Haines, John	Richmond.....	Wayne	39 52	84 59	.....	B. T.....	12
Larrabee, William H.....	Green Castle...	Putnam.....	39 30	86 47	800	N.....	7
Smith, Hamilton, jr.	Cannelton.....	Perry	37 57	86 42	450	A.....	12
Spratt, W. W., M. D.....	Leo.....	Allen.....	.....	.....	.....	T.....	1
Webb, Miss Georgiana	Fort Wayne...	Allen.....	41 10	85 00	761	N.....	3

IOWA.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instrument.	No. of months received.
			° /	° /	Feet.		
Beal, Dexter.....	Grove Hill.....	Bremer.....	42 45	87 15	.....	T.	12
Beal, Willard W.							
Belfield, H. H.	Davenport.....	Scott	41 30	90 40	737	A.	12
Chamberlain, John.....							
Dunwoody, Wm. P.	Washington ...	Washington ...	42 30	91 55	987	T.	2
Boyle, C. R.	Mount Vernon..	Linn.....	42 00	91 00	.....	T.	12
Collin, Prof. Alonzo.....	Independence..	Buchanan.....	.....	.....	.....	T.	1
Deering, D. S.	Waterloo	Black Hawk...	42 30	92 31	.....	N.	12
Doyle, L. H.	Muscatine	Muscatine.....	41 26	92 00	.....	N.	12
Foster, Suel.....	Bangor.....	Marshall.....	42 00	93 00	.....	T. R.	2
Gidley, Isaac M.	Dubuque	Dubuque	42 30	90 52	666	A.	12
Horr, Asa, M. D.	Lyons.....	Clinton.....	41 50	90 10	401	T. R.	12
Hudson, A. T., M. D.	Davenport.....	Scott.....	41 31	90 42	555	A.	3
Langer, Dr. Ignatius.....	Pleasant Plain.	Jefferson	41 07	94 54	950	T. R.	12
McConnel, Townsend	Algona	Kossuth	43 01	94 04	1,500	T.	12
McCoy, Franklin, M. D. ..							
McCoy, Miss Elizabeth..	Fort Madison..	Lee.....	40 37	91 28	.....	T. R.	12
McCreedy, Daniel.....	Vernon Springs.	Howard.....	43 20	92 12	.....	B. T.	6
Marshall, Gregory.....	Sioux City.....	Woodbury.....	42 33	96 27	1,258	T. R.	10
Millard, A. J.	Iowa City.....	Johnson.....	.....	.....	.....	A.	12
Parvin, Theodore S.	Kossuth.....	Des Moines...	41 00	91 13	.....	N.	5
Reid, Isaiah	Forestville.....	Delaware.....	42 40	91 50	.....	T.	12
Sheldon, Daniel.....	Muscatine.....	Muscatine.....	41 25	92 02	586	A.	12
Ufford, Rev. John.....	Hesper	Winneshiek ...	43 30	91 46	720	T.	3
Williams, H. B.							

KANSAS.

Blackman, W. J. R.	Lawrence.....	Douglas	39 00	95 12	800	A.	10
Fish, Lucian.....	Burlingame....	Shawnee .....	.....	.....	.....	T. R.	3
Goodnow, Isaac T.	Manhattan....	Riley	39 13	96 45	1,000	T. R.	12
Goss, B. F.	Neosho Falls...	Woodson.....	38 03	95 31	.....	T. R.	9
McCormick, Wm. A.	Lecompton	Douglas ...	39 03	95 10	825	T.	3
Scott, James.....	Gardner	Johnson.....	.....	.....	.....	T.	8
Shaw, M.	Leavenworth..	Leavenworth..	39 18	94 32	896	T.	12

KENTUCKY.

Barbage, Joshua C.	Hardinsburg....	Breckenridge ..	37 40	86 15	500	N.	8
Beatty, O.	Danville.....	Boyle.....	37 40	84 30	900	B. T. R. ..	11
Mathews, Jos. McD., D. D.	Nicholasville ..	Jessamine.....	37 58	84 18	940	A.	12
Mattison, Andrew.....	Paducah	Mt. Cracken ...	37 00	87 21	.....	N.	12
Miles, Thomas H., S. J.	Bardstown.....	Nelson	37 52	85 18	.....	A.	9
Savage, Rev. G. S., M. D. ..	Millersburg	Bourbon.....	38 40	84 27	804	B. T. R. ..	12
Swain, John, M. D.	Ballardsville...	Oldham	38 36	85 30	461	A.	12
Williams, Prof. M. G.	Newport	Campbell	39 04	83 24	812	B. T. R. ..	5
Woodruff, E. N.	Louisville.....	Jefferson	38 20	85 38	.....	A.	10
Young, Mrs. Lawrence....	Louisville.....	Jefferson	38 07	85 24	570	A.	12

LOUISIANA.

Harrison, Thompson	New Orleans...	Orleans	29 58	90 00	25	A.	2
Taylor, Lewes B.	New Orleans...	Orleans	29 58	90 07	.....	T. R.	2

MAINE.

Adams, John W.	Portland.....	Cumberland....	43 39	70 00	180	N.	10
Brackett, G. Emerson.....	Belfast.....	Waldo.....	44 23	69 08	.....	T. R.	12
Dana, Wm. D.	North Perry....	Washington....	45 00	67 06	100	A.	12

MAINE—Continued.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Gaines, Rev. A. G.....	Bethel.....	Oxford.....	44 20	70 52	650	T. R.....	12
Gardiner, R. H.....	Gardiner.....	Kennebec.....	44 40	69 46	90	B. T. R..	12
Gould, M.....	N'th Bridgeton..	Cumberland...	44 03	70 45	300	B. T. R..	12
Guptill, G. W.....	Cornishville...	York.....	43 40	70 44	800	T. R.....	12
Johnson, Warren.....	Topsham.....	Sagadahoc.....	44 00	70 00	100	B. T.....	8
Lord, W. G.....	Limington.....	York.....	43 40	70 45	500	N.....	2
Moore, Asa P.....	Lisbon.....	Androscoggin..	44 00	70 04	130	T. R.....	12
Parker, J. D.....	Steuben.....	Washington....	44 44	67 50	50	A.....	12
Pratt, J. Frank, M. D.....	New Sharon....	Franklin.....	44 37	70 03	.....	N.....	6
Reynolds, Henry.....	East Wilton...	Franklin.....	44 44	70 17	.....	N.....	9
Van Blarcom, James.....	Vassalboro'....	Kennebec.....	44 28	69 47	.....	B. T.....	9
Verrill, G. Washington, jr..	Norway.....	Oxford.....	44 10	70 35	.....	T.....	1
West, Silas.....	Cornish.....	York.....	43 40	70 44	784	T. R.....	12
Wilbur, Benj. F.....	Dexter.....	Penobscot.....	44 55	69 32	700	R.....	12
Wilson, Dr. J. B.....	Exeter.....	Penobscot.....	44 58	68 59	.....	T. R.....	8

MARYLAND.

Baer, Miss Harriott M.....	Sykesville.....	Carroll.....	39 23	76 57	700	T. R.....	12
Bell, Jacob E.....	Leitersburg....	Washington...	39 35	77 30	.....	T. R.....	12
Dutton, Prof. J. Russel....	Chestertown...	Kent.....	39 12	75 59	.....	A.....	12
Goodman, Wm. R.....	Annapolis.....	Anne Arundel..	38 59	76 29	20	A.....	12
Hanshaw, Henry E.....	Frederick.....	Frederick.....	39 24	77 26	.....	A.....	12
Johns, Montg., M. D.....	Agric'l College.	Prince George..	.....	.....	.....	A.....	12
Lowndes, Benj. O.....	Bladensburg....	Prince George..	38 57	76 58	70	T. R.....	12
Stephenson, Rev. Jas.....	St. Inigoes.....	St. Mary's.....	38 10	76 41	45	A.....	12

MASSACHUSETTS.

Astronomical Observatory.	Williamstown..	Berkshire.....	42 43	73 13	725	B. T. R..	12
Bacon, William.....	Richmond.....	Berkshire.....	42 23	73 20	1,190	T. R.....	12
Brown, Nathan W.....	Topsfield.....	Essex.....	.....	.....	.....	T. R.....	12
Davis, Rev. Emerson.....	Westfield.....	Hampden.....	42 06	72 48	180	A.....	12
Fallon, John.....	Lawrence.....	Essex.....	42 42	71 11	133	A.....	12
Metcalf, John G., M. D....	Mendon.....	Worcester.....	42 06	71 34	.....	T. R.....	12
Mitchell, Hon. Wm.....	Nantucket.....	Nantucket.....	41 17	70 06	30	A.....	3
Morse, Geo. M., M. D.....	Clinton.....	Worcester.....	42 25	71 42	.....	T. R.....	3
Normal School.....	Bridgewater....	Plymouth.....	42 00	71 00	150	A.....	4
Prentiss, Dr. Henry C.....	Worcester.....	Worcester.....	42 16	71 48	528	A.....	12
Raymond, George.....	Fitchburg.....	Worcester.....	42 35	71 50	484	P. T. R..	12
Reynolds, Orrin A.....	Randolph.....	Norfolk.....	42 10	71 00	311	N.....	2
Rodman, Samuel.....	New Bedford..	Bristol.....	41 39	70 56	90	A.....	12
Scandlin, Rev. Wm. G.....	Grafton.....	Worcester.....	.....	.....	.....	B. T.....	6
Snell, Prof. E. S.....	Amherst.....	Hampshire.....	42 22	72 34	267	A.....	12
Terry, Charles C.....	Fall River.....	Bristol.....	.....	.....	.....	T.....	3
Whitcomb, L. F.....	Florida.....	Berkshire.....	42 41	73 02	2,000	F.....	2

MICHIGAN.

Blaker, Dr. G. H., jr.....	Marquette.....	Marquette.....	46 32	87 41	630	A.....	12
Bowlsby, George W.....	Monroe.....	Monroe.....	41 56	83 30	584	B. T. R..	1
Coffin, Matthew.....	Otsego.....	Allegan.....	42 28	85 42	662	N.....	11
Crosby, J. B.....	New Buffalo...	Berrien.....	41 45	86 46	661	B. T. R..	7
Pitcher, Dr. Zena.....	Detroit.....	Wayne.....	42 24	82 58	597	A.....	10
Smith, Charles C., M. D....	Redford Centre.	Wayne.....	42 28	83 10	650	T. R.....	3
Smith, Rev. L. M. S.....	Mill Point.....	Ottawa.....	43 06	86 11	.....	T.....	12
Streng, L. H.....	Holland.....	Ottawa.....	42 00	86 00	.....	T. R.....	12
Strong, Edwin A.....	Grand Rapids..	Kent.....	43 00	86 00	752	T. R.....	4
Walker, Mrs. Octavia C....	Cooper.....	Kalamazoo....	42 40	85 30	690	T. R.....	12
Whelpley, Miss Helen I. }	Monroe.....	Monroe.....	41 56	83 23	590	T. R.....	12
Whelpley, Miss Florence }	Ypsilanti.....	Washtenaw....	42 15	83 47	751	A.....	12
Woodard, C. S.....							

MINNESOTA.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	<i>Feet.</i>		
Garrison, O. E.	St. Cloud	Stearns	45 45	94 23	.....	.....	10
Kelley, O. H.	Itasca	Anoka	45 16	93 32	856	T.	7
Riggs, Rev. S. R.	Pajutazee	Brown	45 00	94 00	.....	T. R.	11
Smith, A. C.	Forest City	Meeker	45 45	96 00	.....	T. R.	12
Thickstun, T. F.	Chatfield	Fillmore .....	.....	.....	*325	T. R.	5
Wieland, C.	Hastings	Dakotah .....	.....	.....	.....	B. T.	7
	Beaver Bay	Lake	47 12	91 18	850	B. T.	12

MISSISSIPPI.

Cribbs, J. R.	Monticello	Lawrence	31 34	90 00	600	T.	2
McCary, Robert	Natchez	Adams	31 34	91 25	264	B. T. R. ..	6
Robinson, Rev. E. S.	Prairie Line	Jasper	32 10	89 20	.....	A.	2
Swasey, Col. C. B.	Yazoo City	Yazoo	32 55	90 31	.....	N.	3

MISSOURI.

Bailey, S. S.	Dundee	Franklin	38 30	91 10	536	T. R.	6
Bowles, S. B., M. D.	Greenfield	Dade	37 22	93 41	1,800	N.	*6
Christian, John	Harrisonville ..	Cass .....	.....	.....	.....	N.	12
Engelmann, George, M. D. ..	St. Louis	St. Louis	38 37	90 15	481	A.	12
Fendler, Augustus	St. Louis	St. Louis	38 37	90 16	470	B. T. P. ..	12
Hanan, B. P.	Luray	Clark	40 28	91 57	.....	N.	2
Horner, W. H.	Hornersville ..	Dunklin	36 03	90 00	.....	T.	3
Koning, Rev. P. W.	St. Louis	St. Louis	38 40	90 15	475	A.	12
Maxey, W. F.	Paris	Monroe	39 30	92 00	700	T. R.	11
Myers, J. H.	Kirksville	Adair	40 38	92 50	1,000	N.	8
Ray, George P.	Canton	Lewis .....	.....	.....	.....	T.	4
Sutherland, Norris	Boonville	Cooper	38 55	92 30	.....	N.	5
Tidswell, Miss Mary Alice.	Warrenton	Warren	38 37	91 16	825	T.	12
Vankirk, W. J.	Bolivar	Polk	37 29	92 45	.....	N.	1
Wells, William	Stockton	Cedar	39 36	93 48	800	T. R.	1
Wilson, Posey S.	Lexington	Lafayette	39 30	93 45	.....	N.	4
Wyrick, M. L.	Cassville	Barry	36 41	93 57	3,000	T. R.	6

NEBRASKA.

Allan, James P.	Omaha City	Douglas	41 15	96 10	1,300	T. R.	2
Bowen, Miss Anna M. J. ...	Elkhorn City ...	Douglas	41 22	96 12	1,000	T.	12
Child, A. L.	Glendale	Cass	41 15	96 00	.....	T.	3
Evans, John	Fontenelle	Dodge	41 31	96 45	1,000	T.	12
Hamilton, Rev. Wm.	Bellevue	Sarpy	41 08	95 50	.....	T. R.	12
Pardee, H. C.	Rock Bluffs	Cass	40 54	95 54	1,000	T.	2
Rosseau, M. C.	Fort Pierre† .....	.....	44 00	100 00	.....	N.	5
White, Bela	Kenosha	Cass	40 51	95 54	1,050	N.	12

NEW HAMPSHIRE.

Bell, Louis	Farmington	Strafford	43 20	71 00	300	B. T. R. ..	1
Bell, Samuel N.	Manchester	Hillsborough ..	42 59	71 28	300	B. T. R. ..	4
Brown, Branch	Stratford	Coos	44 08	71 34	1,000	T. R.	12
Chase, Arthur	Claremont	Sullivan	43 22	72 21	539	B. T. R. ..	12
Nason, Rev. Elias	Exeter	Rockingham	42 58	70 55	125	B. T.	12
Odell, Fletcher	Shelburne	Coos	44 23	71 06	700	B. T.	12
Pitman, Charles H.	North Barnstead	Belknap	43 38	71 27	.....	T.	12

* Above La Crosse.

† Place of observation mouth of Cherry creek, Cheyene river ; same in 1860.

NEW JERSEY.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Harper, Prof. L.....	Riceville.....	Monmouth	40 24	73 59	111	B. T. P..	8
Rhees, Morgan J., M. D...	Mount Holly...	Burlington.....	.....	.....	30	B. T.....	12
Stokes, Howard A.....	Long Branch ..	Monmouth	40 20	74 06	10	T. R	2
Thompson, George W.....	New Brunswick	Middlesex.	40 30	75 31	90	N.	12
Thornton, Dr. S. C.....	Moorestown...	Burlington ...	39 58	74 57	.....	T.....	3
Whitehead, W. A.	Newark.	Essex.....	40 45	74 10	35	B. T. R...	12
Willis, O. R.....	Freehold	Monmouth	40 15	74 21	.....	T.....	12

NEW YORK.

Arden, Thomas B.....	Garrison's	Putnam	41 23	74 02	180	T. R.....	12
Auber, John.....	Fordham	Westchester ...	40 54	73 57	147	B. T.....	5
Monroe, Prof. A. T.....							
Bartlett, E. B.....	Vermillion.....	Oswego	43 26	77 26	327	T.	12
Beauchamp, Wm. M.....	Skaneateles ...	Onondaga	43 00	76 30	932	B. T.....	12
Bowman, John.....	Baldwinsville..	Onondaga	43 04	76 41	.....	T.....	12
Brown, Rev. John J.....	Dansville	Livingston.....	42 38	77 54	672	A.....	5
Clark, Sereno.....	Constantia.....	Oswego	43 17	76 05	424	T. R	1
Cowing, Philo	Seneca Falls .	Seneca	42 54	76 51	463	B. T	8
Dill, John B	Auburn.....	Cayuga.....	42 55	74 28	.....	T.....	12
Denning, William H.....	Fishkill Landing	Dutchess	41 34	74 18	42	B. T. R..	12
Dewey, Prof. Chester ...	Rochester	Monroe	43 08	77 51	516	B. T. R..	12
Kreyer, C. T.....							
Flint, Prof. Weston.	Otto	Cattaraugus ...	42 22	79 00	1,300	T.....	2
Gregory, S. O.....	Theresa	Jefferson	44 12	75 48	365	T. R	10
Guest, W. E.....	Ogdensburg....	St. Lawrence..	44 43	75 37	232	R.	1
Haskin, Wm. L.....	Troy	Rensselaer ...	42 44	73 37	58	A.	6
Heimstreet, John W	Troy	Rensselaer ...	42 44	73 37	58	A.	12
Hibberd, A. A	Hermitage.....	Wyoming	42 09	78 14	.....	T. R	12
Holmes, Dr. E. S... ..	Wilson	Niagara	43 20	78 56	250	T.....	12
House, John C.....	Waterford	Saratoga.....	42 47	73 39	70	A.	12
Howell, Robert	Nichols.....	Tioga	42 00	76 32	.....	T.....	12
Ives, William.....	Buffalo	Erie	42 50	78 56	600	A.	12
Lattimore, Prof. S. A. ...	Lima.....	Livingston.....	42 53	77 51	.....	B. T. P..	2
Mackie, Mathew	Clyde.....	Wayne.....	43 10	77 10	400	B. T. ...	12
Malcom, Wm. S.....	Oswego	Oswego	43 28	76 30	250	B. T. R..	12
Mathews, M. M., M. D....	Rochester	Monroe.....	43 08	77 51	525	A.	12
Morris, Prof. O. W.....	New York.....	New York.....	40 43	74 05	25	A.	12
Packard, Levi S.....	Spencertown ..	Columbia.....	42 18	73 32	700	A.	6
Potter, C. D., M. D.....	Adams Centre.	Jefferson	43 48	75 52	632	R.	3
Russell, C. H.....	Gouverneur ...	St. Lawrence..	44 19	75 29	.....	B. T	12
Slade, Fred. J.	New York	New York.....	40 45	73 59	79	A.	5
Spooner, Dr. Stillman....	Wampsville....	Madison.....	43 04	75 50	500	T. R	12
Sylvester, Dr. E. Ware....	Lyons.....	Wayne.....	.....	.....	.....	B. T	12
Titus, Henry Wm.....	Bellport	Suffolk	40 44	72 54	15	A.	12
Wadsworth, A. S.....	Henrietta.....	Monroe	43 06	77 51	600	B. T. P..	12
Wakeley, Charles C., Ruth- erford's Observatory.....	New York.....	New York.....	40 44	73 59	41	A.	5
White, Aaron.....	Cazenovia.....	Madison.....	42 55	75 46	1,260	A.	12

NORTH CAROLINA.

Adams, Prof. E. W.....	Goldsborough..	Wayne.....	35 20	77 51	102	T. R	3
Craven, Rev. B	Trinity College.	Randolph.....	35 45	80 00	400	A.	1
McDowell, Rev. A.....	Murfreesboro'..	Hertford.....	36 30	77 01	.....	A.	4
Moore, Geo. F., M. D.....	Green Plains ..	Northampton ..	36 32	77 45	.....	T. R	3
Phillips, Prof. James, D. D.	Chapel Hill...	Orange	35 54	79 17	.....	B. T. R..	4

OHIO.

Abell, B. F	Welshfield ...	Geauga.....	41 23	81 12	1,205	T. R	12
Adams, D. P.....	Marietta.	Washington ...	39 25	81 31	630	T. R	12
Ammen, J.....	Ripley.....	Brown	38 37	83 31	.....	B. T. R..	3
Benner, J. F.....	New Lisbon ...	Columbiana ...	40 45	80 45	961	B. T. R..	12
Clark, Wm. P.....	Medina.....	Medina	41 07	81 47	1,255	A.	12
Colbrunn, Edward	Cleveland	Cuyahoga	41 30	81 40	665	T.....	12

OHIO—Continued.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Cotton, D. B., M. D.	Portsmouth....	Scioto.....	38 45	82 50	529	B. T. R..	12
Crane, George W.	Bethel.....	Clermont.....	39 00	84 00	555	T. R....	6
Davidson, H. M.	Freedom	Portage ...	41 13	81 08	1,100	B. T. R..	11
Davidson, Wilson.							
Dille, Israel	Newark	Licking	40 07	82 21	825	T	12
Fuller, W. G.	Harmar	Washington ...	39 24	81 28	631	T	3
Hammitt, John W.	College Hill....	Hamilton.....	39 19	84 26	800	N	11
Harper, George W.	Cincinnati....	Hamilton.....	39 06	84 27	*500	A	12
Haywood, Prof. John	Westerville....	Franklin	40 04	83 00	.....	A	12
Hill, F. G.	Dallasburg....	Warren	39 30	84 31	800	N	12
Hillier, Rev. Spencer L..	Brecksville	Cuyahoga	41 15	81 30	800	A	2
Huntington, George C.	Kelley's Island.	Erie.....	41 36	82 42	587	B. T. R..	12
Hyde, Gustavus A.	Cleveland	Cuyahoga	41 30	81 40	643	B. T. R..	12
Ingram, John, M. D.	Savannah	Ashland	41 12	82 31	1,098	A	12
Johnson, Thos. H.	Coshocton.....	Coshocton.....	40 18	81 53	765	A	4
King, Mrs. Ardelia C.	Madison.....	Lake	41 50	81 00	620	T. R....	12
Lumsden, Rev. Wm.	West Union ...	Adams	38 47	83 28	.....	T. R....	1
McClung, Charles L.	Troy	Miami.....	40 03	84 06	1,103	B. T. R..	12
McMillan, Smith B.	East Fairfield..	Columbiana ...	40 47	80 44	1,152	A	12
Newton, Rev. Alfred	Norwalk	Huron.....	41 15	82 30	.....	T	12
Peck, Wm. R., M. D.	Bowling Green.	Wood	41 15	83 40	700	B. T. R..	12
Phillips, R. C. and J. H.	Cincinnati....	Hamilton.....	39 06	84 27	540	B. T. R..	12
Pierce, Warren	Garrettsville ...	Portage	41 15	81 10	900	T	6
Pillsbury, Mrs. M. A.	East Cleveland.	Cuyahoga	41 31	81 38	659	B. T.	12
Shields, Rev. Robert	Bellecentre....	Logan.....	40 30	83 45	1,170	B. T. R..	3
Spratt, Dr. Wm. W.	Andrews	Morrow	40 45	80 45	1,500	T	4
Sperry, Mark	Croton	Licking	40 13	82 38	.....	T. R....	12
Thompson, Rev. E.							
Stuver, A. S.	Western Star..	Summit	41 04	80 40	.....	T	6
Tappan, Eli T.	Cincinnati....	Hamilton.....	39 07	84 27	†470	A	5
Trembley, J. B., M. D.	Toledo	Lucas	41 39	82 32	604	B. T.	12
Ward, Rev. L. F.	Seville	Medina.....	39 59	81 47	1,075	A	9
Warder, A. A.	Cincinnati....	Hamilton.....	39 08	84 35	800	T. R....	12
Williams, Prof. M. G.	Urbana.....	Champaign	40 06	83 43	1,015	B. T. R..	4
Wilson, Prof. J. H.	College Hill ...	Hamilton.....	39 19	84 26	800	B. T. R..	12
Young, Prof. Chas. A.	Hudson ..	Summit	41 15	81 24	1,137	B. T. R..	12
Barrows, A. C.							

OREGON.

Crawford, Thomas H.	Salem.....	Marion.....	44 55	122 45		T. R....	1
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PENNSYLVANIA.

Boyers, W. R.	Latrobe	Westmoreland.	40 20	79 16	569	T. R....	1
Brugger, Samuel.....	Blairsville	Indiana	40 31	74 43	1,010	T. R....	3
	Fleming	Centre	40 55	77 53	780	T. R....	12
Coffin, Selden J.	Towanda.....	Bradford	41 47	76 34	840	B. T.	7
Dean, Wm. H.							
Kingsbery, J. H.	Parkersville ...	Chester	39 54	75 37	218	T. R....	12
Darlington, Fenelon	Berwick.....	Columbia.....	41 05	76 15	583	A	9
Eggert, John.....	Shamokin	Northumber'd .	40 15	76 30	700	T. R. ...	12
Friel, P.	Morrisvillie...	Bucks.....	40 12	74 48	30	B. T. R..	12
Hance, Ebenezer	Bedford	Bedford	40 01	78 30	.....	T. R....	12
Heckerman, Rev. Henry...	Harrisburg....	Dauphin	40 16	76 15	.....	B. T. R..	12
Heisely, Dr. John	Chambersburg .	Franklin.....	39 58	77 45	618	A	11
Heyser, William, jr.	Harrisburg....	Dauphin.....	40 20	76 50	320	A	12
Hickok, W. O.	Mount Joy....	Lancaster	40 08	76 30	.....	A	12
Hoffer, Dr. Jacob R.	Easton	Northampton ..	40 43	75 16	320	A	12
Houghton, George S.	Nazareth	Northampton ..	40 43	75 21	530	B. T. R..	10
Huebner, O. T.	Gettysburg	Adams	39 49	77 15	624	B. T. R..	12
Jacobs, Rev. M.							
Eyster, D.	N. Whitehall ..	Lehigh	40 40	75 26	250	T	12
Kohler, Edward.....	Cannonsburg ..	Washington ...	40 17	80 10	936	A	10
Lyceum, Jefferson College.	Harrisburg	Dauphin.....	40 16	76 55	.....	B. T. R..	3
Martin, R. A.							

*Above low water mark of Ohio river.

† Above low water in the Ohio river at Cincinnati.

PENNSYLVANIA—Continued.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	<i>Feet.</i>		
Martindell, Isaac	Byberry	Philadelphia ...	40 05	75 00	70	T. R.	10
Martindale, Jos. C., M. D..	Philadelphia...	Philadelphia ...	40 05	75 09	.....	N.	1
Meehan, Thomas	Germantown ..	Philadelphia ...	.....	.....	.....	N.	12
Mowry, George.....	Somerset.....	Somerset	40 00	79 03	2,195	A.	12
Muller, Prof. Rudolph.....	Latrobe	Westmoreland.	40 27	79 32	985	B. T. R..	12
Ralston, Rev. J. Grier.....	Norristown	Montgomery...	40 08	75 19	153	A.	12
Saurman, Jonn W.....	Byberry	Philadelphia ...	40 00	74 49	.....	T. R.	2
Scott, Samuel.....	Worthington ..	Armstrong	41 50	79 31	1,050	T. R.	12
Smith, Wm., D. D.....	Cannonsburg ..	Washington ...	40 17	80 10	936	B. T. R..	12
Speer, Alex. M., M. D.....	Pittsburg	Alleghany	40 32	80 02	850	B. T. R..	1
Swift, Dr. Paul	W. Haverford..	Delaware.....	40 00	75 21	400	T. R.	12
Travelli, John I.....	Sewickleyville.	Alleghany	40 38	80 14	656	B. T. R..	12
Tracy, George H.....							

RHODE ISLAND.

Caswell, Prof. A.	Providence	Providence	41 49	71 25	120	A.	12
Sheldon, H. C	Providence	Providence	41 50	71 25	.....	B. T. R..	12

SOUTH CAROLINA.

Cornish, Rev. John H	Aiken	Barnwell	33 32	81 34	565	T. R.	2
Glennie, Rev. Alexander ..	Georgetown ...	All Saints	33 29	79 17	20	A.	4
Johnson, Joseph, M. D..	Charleston	Charleston	32 46	80 00	20	B. T. R..	9
Dawson, J. L., M. D....							
Pelzer, George S., M. D..	Black Oak	Charleston	33 00	80 00	50	A.	3
Ravenel, Thomas P.....							

TENNESSEE.

Barney, Chas. R.	University Pl ..	Franklin	35 12	86 00	2,000	B. T. R..	3
Dodge, J. W., & Son.....	Pomona	Cumberland ...	36 00	85 00	2,200	T.	4
Jennings, S. K., M. D.....	Austin	Wilson.....	36 20	86 20	2,000	T. P. R..	5
Stewart, Prof. Wm. M.....	Clarksville	Montgomery...	36 28	87 13	481	A.	12
Mitchell, R. W., M. D.....	Memphis	Shelby	35 08	90 00	262	A.	3

TEXAS.

Allis, Melvin H	Gonzales	Gonzales	29 35	97 30	.....	N.	3
Freese, G.	Boston	Bowie.....	32 25	94 40	600	N.	2
Gantt, Dr. Wm. H.....	Union.....	Washington ...	30 11	96 31	540	T. R.	2
Glasco, J. M.	Gilmer	Upshur.....	32 46	94 51	950	T. R.	2
Kellog, F.	Wheelock.....	Robertson	30 50	96 30	450	T. R.	1
Rayel, James	Turner's Point.	Kaufman.....	32 30	96 00	.....	T.	1
Schumann, Bruno	Round Top	Fayette	30 06	96 37	.....	T. R.	4
Van Nostrand, J	Austin	Travis.....	30 20	97 46	650	T. P. R..	4
West, Dr. N. P.....	Burkeville.....	Newton	31 00	93 31	.....	T.	4
Yellowby, Prof. C. W.....	Webberville ...	Travis.....	30 10	97 31	.....	B. T. R..	4

UTAH.

Pearce, Harrison	Heberville.....	Washington ...	37 00	114 00	.....	T. R.	9
Phelps, W. W.....	Great Salt Lake City.	Salt Lake	40 45	111 26	4,260	A.	11

VERMONT.

Name of observer.	Station.	County.	North latitude.	West longitude.	Height.	Instruments.	No. of months received.
			° /	° /	Feet.		
Buckland, David	Brandon	Rutland	43 45	73 00	.....	T. R	12
Chickering, Rev. J. W.	Springfield . . .	Windsor	43 18	72 33	300	T. R	12
Cutting, Hiram A	Lunenburg	Essex	44 28	71 41	1,124	A	12
Fairbanks, Franklin	St. Johnsbury ..	Caledonia	44 25	72 00	540	B. T. R. . .	1
Paddock, James A	Craftsbury	Orleans	44 40	72 29	1,100	T. R	12
Parker, Joseph	West Rupert	Bennington	43 15	73 11	750	T	5
Petty, McK.	Burlington	Chittenden	44 27	73 10	367	A	12
Toby, James K.	Calais	Washington ...	44 22	72 09	.....	T. R	5

VIRGINIA.

Abell, J. Ralls	Charlottesville.	Albemarle .. .	38 00	78 31	521	T. R	4
Astrop, Col. R. F	Crichton's Store	Brunswick	36 40	77 46	500	T. R ...	1
Dickinson, George O.	Cobham Depot.	Albemarle .. .	38 05	78 21	450	T. R	4
Ellis, D. H	Wardensville ..	Hardy	39 30	78 03	1,720	A	5
Fraser, James	New England ..	Wood	39 20	81 00	.....	N	10
Jones, Silas B	Fork Union	Fluvanna	37 40	78 21	.....	N	3
Kendall, James E.	Kanawha C. H.	Kanawha	38 20	81 30	720	T. R	1
Meriwether, Charles I	Richmond .. .	Henrico .....	.....	.....	.....	T. R	4
Marvin, John W.	Winchester ..	Frederick . . .	39 15	78 10	.....	T. R	4
Park, William K.	Lexington .. .	Rockbridge . .	37 41	79 25	.....	A	3
Purdie, John R., M. D.	Smithfield .. .	Isle of Wight ..	37 02	76 37	100	T. R	3
Robey, Charles H	Fredericksburg	Spottsylvania..	38 20	77 20	600	N	3
Roedel, W. D.	Wytheville	Wythe	36 55	81 00	2,287	T. R	4
Stalnaker, J. W., M. D.	Lewisburg .. .	Greenbrier	37 49	80 28	2,000	T. R	3
Van Doren, Abram	Falmouth	Stafford	38 15	77 34	350	T. R	3

WISCONSIN.

Armstrong, S	Caldwell Prairie	Racine	42 48	88 13	.....	T	11
Atwood, Isaac	Lake Mills	Jefferson	43 00	89 00	.....	N	12
Bell, James H	Kilbourn City ..	Columbia	43 30	90 00	945	N	12
Curtis, W. W	Rocky Run	Columbia	43 26	89 20	.....	T. R	12
Ellis, Edwin, M. D.	Ashland .. .	Ashland	46 33	91 00	610	T. R	8
Gridley, Rev. John	Kenosha	Kenosha	42 35	87 50	600	B. T. R. . .	12
Kelley, Charles W	Delafield	Waukesha	43 06	88 36	900	B. T	12
Kelsey, Prof. Henry S.	Beloit	Rock	42 30	89 04	750	B. T. R. . .	12
Lapham, Increase A	Milwaukee .. .	Milwaukee	43 03	87 56	593	A	12
Larkin, Prof. E. P	Milwaukee .. .	Milwaukee	43 02	87 55	684	B. T	1
Lüps, Jacob	Manitowoc .. .	Manitowoc .. .	44 07	87 45	658	B. T	12
Mann, William	Superior	Douglas	46 46	92 03	680	T. R	12
Mason, Prof. R. Z	Appleton	Outagamie	44 10	88 35	800	A	12
Mathews, George	Burlington	Racine	42 39	.....	700	N	12
Parker, Melzar	Weyauwega	Waupaca	44 15	88 50	870	T	5
Pease, Dr. Clark G	Janesville	Rock	42 43	89 09	780	T	10
Phelps, Hiland W	Racine	Racine	42 45	87 48	660	B. T	1
Towers, M. H	Dartford	Green Lake	43 30	89 25	.....	B. T	10
Sterling, Prof. J. W	Madison	Dane	43 05	89 25	1,068	A	10
Fellows, William .....	.....	.....	.....	.....	.....	.....	.....
Struthers, R. H	Rural	Waupaca	44 20	89 05	.....	T	9
Winkler, Carl, M. D	Milwaukee	Milwaukee	43 03	87 57	600	B. T. R. . .	8
Wood, William	Weyauwega	Waupaca	44 15	88 50	850	T	3

MEXICO.

Name of observer.	Station.	Latitude.	Longitude.	Height.	Instruments.	No. of months received.
		° /	° /	Feet.		
Laszlo, Charles	San Juan Bautiste, Tabasco	17 47	92 46	40	A	2
Sartorius, Charles	Mirador, Vera Cruz	19 15	96 25	3,600	A	12

CENTRAL AMERICA.

Name of observer.	Station.	Latitude.	Longitude.	Height.	Instruments.	No. of months received.
Canudas, Antonio	Gautemala College, Gautemala...	° / 14 37	° / 90 30	Feet. 4,856	A	12

WEST INDIES.

Carothers, A. G.	Turk's Island	21 31	71 08	15	B. T ...	9
Garland, Samuel G.	Salt Cay, Turk's Island	21 00	71 15	20	B. T	1

BERMUDA.

Royal Engineers, (in the Royal Gazette.)	Centre Signal Station, Saint George's.				A	12
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SOUTH AMERICA.

Hering, C. T.	Government Plantation Rustenberg, colony of Surinam, Dutch Guiana.				A	8
Brown, George Hunter	Jauja, Peru	12 00 S.	75 15	10,500	B. T. P..	1

DEATHS OF OBSERVERS.

George P. Lockwood, Wheeling, Virginia, early in 1860.
Dr. Thompson Mead, Batavia, Illinois, March 30, 1861.

Colleges and other institutions from which meteorological registers were received during the year 1861, included in the preceding list.

Nova Scotia	Acadia College	Wolfville.
	King's College	Windsor.
Canada	Grammar School	Niagara.
	Magnetic Observatory	Toronto.
	University of McGill College	Montreal.
Alabama	Baptist Female Institute	Moulton.
California	University of the Pacific	Santa Clara.
Connecticut	Wesleyan University	Middletown.
Illinois	Lombard University	Galesburg.
	McKendree College	Lebanon.
	University of Chicago	Chicago.
	Wheaton College	Wheaton.
Iowa	Cornell College	Mount Vernon.
	Griswold College	Davenport.
	Iowa State University	Iowa City.
	Yellow Spring College	Kossuth.
Kentucky	Mount Alba College	Hardinsburg.
	St. Joseph's College	Bardstown.
Maine	Franklin School	Topsham.
	Oak Grove Seminary	Vassalboro'.
Maryland	Agricultural College	Prince George county.
	Washington College	Chestertown.
Massachusetts	Amherst College	Amherst.
	Normal School	Bridgewater.

Colleges, &c., from which meteorological registers were received, &c.—Continued.

Massachusetts.....	State Lunatic Hospital.....	Worcester.
	Williams' College.....	Williamstown.
Michigan.....	Marine Hospital.....	Detroit.
Missouri.....	St. Louis University.....	St. Louis.
New Jersey.....	Freehold Institute.....	Freehold.
New York.....	Genesee College.....	Lima.
	Institution for Deaf and Dumb.....	New York.
	St. John's College.....	Fordham.
	University of Rochester.....	Rochester.
	Young Men's Association.....	Buffalo.
North Carolina.....	Trinity College.....	Randolph county.
Ohio.....	Farmers' College.....	College Hill.
	Halcyon Academy.....	Croton.
	Otterbein University.....	Westerville.
	Urbana University.....	Urbana.
	Western Reserve College.....	Hudson.
	Woodward High School.....	Cincinnati.
Oregon.....	Wallamet University.....	Salem.
Pennsylvania.....	Haverford College.....	West Haverford.
	Jefferson College.....	Cannonsburg.
	Marine Hospital.....	Pittsburg.
	St. Vincent's College.....	Latrobe.
	Sewickleyville Academy.....	Sewickleyville.
	State Lunatic Hospital.....	Harrisburg.
	Susquehanna Collegiate Institute.....	Towanda.
Rhode Island.....	Brown University.....	Providence.
Tennessee.....	Stewart College.....	Clarksville.
Texas.....	Deaf and Dumb Asylum.....	Austin.
	Parsons' Seminary.....	Webberville.
Virginia.....	Virginia Military Institute.....	Lexington.
Wisconsin.....	Beloit College.....	Beloit.
	Lawrence University.....	Appleton.
	Milwaukee High School.....	Milwaukee.
	Racine College.....	Racine.
	Wisconsin University.....	Madison.
Central America.....	Guatemala College.....	Guatemala.

LIST OF METEOROLOGICAL MATERIAL CONTRIBUTED IN ADDITION TO THE
REGULAR OBSERVATIONS.

Austin, E. P., Assistant U. S. Lake Survey.—Aurora noticed at Love Island, Lake Huron, in June, July, and August, 1860.

Blackwell, Thomas.—Daily means of observed temperatures during the year 1861, at two adjacent stations, Victoria Bridge and Point St. Charles, Montreal, Canada, at the hours of 9 a. m., noon, 3 p. m., and 6 p. m.; and also temperature of water of the River St. Lawrence, taken daily at noon; also a summary for the year. 8vo., pps. 13.

Table showing the proportion of rain at Montreal, Canada, due to winds bearing rain from the surrounding regions, for the year 1859.

- Boeltner, Gustav A.*—Original drawings of forty-three different forms of snow crystals, made during 1861 and 1862, at Chicago, Illinois.
- Brackett, George Emerson.*—Monthly summaries of observations made at Belfast, Maine, in 1861; published in the "Republican Journal."
- Buchner, Dr. Otto.*—Analyse des Meteoreisens von Rasgata in Neugranada, von Prof. Wöhler in Göttingen, mit notizen über das Vorkommen und die physikalischen Eigenschaften desselben von Director Partsch, wirklichem mitgliede der Kaiserlichen Akademie der Wissenschaften. Mit einer tafel. 8vo. pp. 11.
- Über den Meteorsteinfall bei Ohaba im Blasendorfer Bezirke in Siebenbürgen, in der Nacht zwischen dem 10. und 11. October, 1857. Von Dr. Moriz Hörnes, vorstand des k. k. Hof-Mineralien-Cabinets. Wien, 1858. 8vo., pp. 8.
- Über den Meteorsteinfall bei Kaba, südwestlich von Debreczin, am 15. April, 1857. Von Dr. Moriz Hörnes. Mit einer Tafel. Wien, 1858. 8vo., pp. 6.
- Die organische Substanz im Meteorsteine von Kaba. Schreiben des correspondirenden Mitgliedes Fr. Wöhler an Dr. Hörnes, mitgetheilt von W. Haidinger, wirklichem Mitgliede der Kaiserlichen Akademie der Wissenschaften. 8vo., pp. 2.
- Der Meteoreisenfall von Hraschina bei Agram am 26. Mai, 1751. Von W. Haidinger. Wien, 1859. 8vo., pp. 30.
- Notiz über das Meteoreisen von Nebraska. Von W. Haidinger. 8vo., pp. 3.
- Das Doppelmeteor von Elmira und Long Island. Von W. Haidinger. 8vo., pp. 4.
- Der Meteorsteinfall von Parnallee, bei Madura, in Hindostan. Von W. Haidinger. 8vo., pp. 3.
- Neuere Untersuchungen über die Bestandtheile des Meteorsteines vom Capland. Schreiben des Fr. Wöhler an W. Haidinger. 8vo., pp. 3.
- Über das von Herrn J. Auerbach in Moskau entdeckte Meteoreisen von Tula. Von W. Haidinger. Moskau, 1861. 8vo., pp. 15.
- [The above ten papers on Meteors are also published in the Transactions of the "Kaiserliche Akadamie der Wissenschaften," at Vienna.]
- Die Feuermeteore, insbesondere die Meteoriten historisch und naturwissenschaftlich betrachtet, von Dr. Otto Buchner. Giesen, 1859. 8vo., pp. 192.
- Versuch eines Quellenverzeichniss zur Literatur über Meteoriten, von Dr. Otto Buchner. Frankfurt a. M., 1861. 4to, pp. 17.
- Canudas, Antonio.*—Printed summary of observations with a full set of instruments, for the year 1861, made at the college in charge of the Jesuit Fathers of Guatemala.
- Caswell, Prof. Alexis, D. D.*—Monthly summaries of observations made at Providence, R. I., during 1861; published in the "Providence Daily Journal."

Dawson, William.—Thermometer observations at Cadiz, Indiana, for the years 1857, 1858, 1859.

Hourly thermometer observations from 4 a. m. to 9 p. m., during October, November, and December, 1861.

Dewey, Rev. Chester, D. D.—Printed summary of observations at Rochester, N. Y., for the year 1861.

Gardiner, R. H.—Printed summary of observations at Gardiner, Maine, for the year 1861, and the means of twenty-four years.

Graham, Lieut. Col.—Annual report of Brevet Lieutenant Colonel J. D. Graham, Major U. S. Topographical Engineers, on the improvement of the harbors of Lakes Michigan, St. Clair, Erie, Ontario, and Champlain, for the year 1860. (The volume contains half hourly observations from January 1 to July 1, 1859, on the rise and fall of the surface of Lake Michigan, and discussions to establish a lunar tide on the lake.)

Heimstreet, John W.—Printed summary of observations at Troy, N. Y., for the year 1861 ; published in the "Troy Daily Budget" newspaper.

Hewitt, C. H.—Barometer and thermometer observations taken at 6 a. m., noon, and midnight, on steamer between San Francisco and Panama, in August and September, 1861.

Hildreth, S. P., M. D.—Monthly registers for the year 1861, at Marietta, Ohio, completing his series of observations from 1824. The whole series has been received at the Institution, and reduced preparatory to publication.

Kaiserliche Geographischen Gesellschaft zu St. Petersburg.—Repertorium für Meteorologie, herausgegeben von der Kais. Geographischen Gesellschaft zu St. Petersburg, redigirt von Dr. Ludwig Friedrich Kämtz, Kaiserl. Russischern Staatsrath und Professor zu Dorpat. Dorpat, 1859, 1860. 4to.

Kingston, G. T.—Mean meteorological results at Toronto, Canada, for the year 1861, by G. T. Kingston, M. A., Director of the Magnetical Observatory, Toronto.—(From the Canadian Journal for March, 1862.) 8vo., pp. 8.

Kongelige Danske Videnskabernes Selskabs, Copenhagen, Denmark.—Collectanea meteorologica, sub auspiciis Societatis Scientiarum Danicæ edita :

Fasc. I. Observationes meteorologicæ a cal. Juniis, 1824, ad cal. Junias, 1825, Apenroæ in Ducatu Slesvicensi factæ ab A. Neuber, Doctore Philosophiæ, Medicinæ et Chirurgiæ, urbis et præfecturæ Apenroensis Physico. Hafniæ, 1829. 4to., pp. 246.

Fasc. II. Observationes meteorologicæ a 1 Jan., 1823, ad 1 Aug., 1837, in Islandia factæ, a Thorstensenio, Medico. Hafniæ, 1839. 4to., pp. 234.

Fasc. III. Observationes meteorologicæ per annos 1829-'34, et 1838-'42, in Guinea factæ, a J. J. Trentepohl, R. Chenon, F. Sannom. Hauniæ, 1845. 4to., pp. 136.

- Kongliga Svenska Vetenskaps-Akademien*, Stockholm, Sweden.—Meteorologiska Iakttagelser i Sverige utgifna af Kongl. Svenska Vetenskaps-Akademien bearbetade af Er. Edlund. Första bandet, 1859. Stockholm, 1860. Oblong 4to, pp. 108.
- Königlich Preussische Statistisches Bureau*, Berlin, Prussia.—Uebersicht der Witterung im nördlichen Deutschland nach den Beobachtungen des Meteorologischen Instituts zu Berlin. 1859, 4to, 28 pp.; 1860, 4to, 32 pp.
- Koninklijk Nederlandsch Meteorologisch Instituut*, Utrecht, Holland.—Uitkomsten van Wetenschap en Ervaring aangaande Winden en zeestroomingen in sommige gedeelten van den Oceaan. Uitgegeven door het Koninklijk Nederlandsch Meteorologisch Instituut. 2e omgewerkte druk. Utrecht, 1856. 4to, pp. 163.
- Lake Winnepissiogee Cotton and Woollen Manufacturing Company*, N. H.—Amount of rain for each month in 1861, at the outlet of Lake Winnepissiogee, in the town of Laconia, and also at Lake Village, about four miles south on the same stream of water. (Similar statements have been previously received for the years 1857 to 1860.) Transmitted by Josiah W. French.
- Lapham, Increase A.*—Notes of Periodical Phenomena and weather, made at Hudson, N. Y., 1790 to 1794, copied from an interleaved almanac.
- Lewis, James.*—Hourly mean temperature at Mohawk, N. Y., for the year 1861, and several shorter periods. Also fac simile specimens of the records made by his metallic self-recording thermometer.
- Martindale, Isaac.*—Summary of observations made at Byberry, Pennsylvania, during the year 1861.
- Martins, Professor Ch.*—Essai sur la Théorie de la Variation diurne barométrique, sur la Constitution de l'Ether, et sur Analogie de ce Fluide avec la Fluide électrique. Mémoire présenté à la Société Académique de l'Aube par le Docteur C. L. Henry, membre associé. Troyes, 1860. 8vo., pp. 144.
- Annuaire Meteorologique de France pour 1850, 1851, 1852. 8vo.
- Du Froid Thermometrique et de ces relations avec le Froid Physiologique dans les Plaines et sur les Montagnes. Montpellier, 1859. 4to, pp. 52.
- Sur le Froid exceptionnel qui a régné à Montpellier dans le courant de Janvier, 1855, les differences notables de temperature observés sur des points tres-rapproches et leur influence sur la vegetation. Montpellier, 1855. 4to, pp. 16.
- Essai sur la nature et l'origine des differentes espèces de Brouillards secs. Versailles, 1850. 8vo. pp. 21.
- Des causes du Froid sur les hautes Montagne. Paris, 1860. 8vo., pp. 38.
- Des climats de la France et de leur influence sur son agriculture et la genie de ses habitants. Versailles, 1850. pp. 26.
- Mémoire sur les températures de la Mer Glaciale à la surface, à de grand profondeurs, et dans le voisinage des Glaciers du Spitzberg. Paris, 1848. 8vo., pp. 72.

Meade, Capt. George G.—Register of water-level and meteorological observations from January to June, 1861, under the direction of Captain George G. Meade, U. S. Topographical Engineers, Superintendent Survey of the North and Northwestern Lakes, as follows :

Sackett's Harbor, N. Y., by Henry Metcalf.

Charlotte, N. Y., by Andrew Mulligan.

Fort Niagara, N. Y., by Louis Leffman.

Monroe Piers, Mich., by John Lane.

Thunder Bay Island, Mich., by I. I. Malden.

Ottawa Point, Mich., by John Oliver.

Grand Haven, Mich., by Heber Squier.

Ontonagon, Mich., by Henry Selby.

Superior, Wis., by George R. Stuntz, assisted by E. H. Bly.

Meteorological Society of Scotland.—Quarterly reports and other regular publications of the society.

Fall of rain at thirty-seven stations in Scotland during each month in the year 1856; published in the *Edinburg New Philosophical Journal* for April, 1857.

Fall of rain at fifty-five stations in Scotland during each month in 1857. *Edinburg New Philosophical Magazine*, April, 1858.

Morris, Prof. O. W.—Summary of observations from 1854 to 1860, inclusive, kept at the Institution for Deaf and Dumb, New York.

Muller, Prof. Dr. Rudolph.—Summaries and diagrams of observations made at St. Vincent's College, Westmoreland county, Pennsylvania, during the year 1861.

Nason, Rev. Elias.—Record of events, meteorological and general, in Exeter, N. H., during the year 1861. Pamphlet, pp. 16.

Naturforschende Gesellschaft, Emden, Hannover.—Die Thermische Windrose für Nordwest Deutschland, von Dr. M. A. F. Prestel. Mit vier figurentafeln. Eingegangen bei der Akademie am 18 Nov. 1860. (Besondrer abdruck aus Band XXVIII, der Verhandlungen der K. L.-C. D. A.) Jena, 1861. 4to, pp. 36.

Meteorologische untersuchungen betreffend die verbreitung des Moorrauchs in den Tagen vom 20. bis 26. Mai, 1860, die isobaromotrischen Linien am 22. Mai und die Gewitter am 20. und 26. Mai, 1860. Von Dr. M. A. F. Prestel. Kleine schriften der Naturforschenden Gesellschaft im Emden VIII. Mit 2 tafeln in steindruck. Emden, 1861. 4to, pp. 24.

Bildliche Darstellung des Ganges der Witterung vom 1. December, 1859, bis 30. November, 1860, im Königreich Hannover. Nach den Beobachtungen der meteorologischen stationen entworfen von Dr. M. A. F. Prestel.

Navy Department, Bureau of Medicine and Surgery.—Monthly registers kept at—

Naval Hospital, Chelsea, Mass., year 1861.

Naval Hospital, New York, year 1861.

Naval Hospital, Philadelphia, year 1861.

Naval Hospital, Portsmouth, Va., January, February, and March, 1861.

- Observatoire Impérial*, Paris.—Daily meteorological observations, by telegraph, from various parts of Europe. (Lithograph.)
- Reale Osservatorio*, Palermo, Italy.—Giornale Astronomico e Meteorologico del Reale Osservatorio di Palermo, pubblicato dal Prof. Domenico Ragona. Vol. 1. Palermo, 1855. 4to, pp. 188.
- Ross, Bernard R., Chief Factor of Hudson's Bay Company*.—Observations at Lake Nipegon, from October 1, 1841, to June 13, 1845. Thermometer at 6 a. m., noon, and 10 p. m.; wind, weather, and remarks. No thermometer after March 25, 1845; instrument broken. Register kept by James Anderson, chief factor. Observations at Fort Simpson, Mackenzie's river, Hudson's Bay Territory, from November 1, 1837, to May 24, 1839. Thermometer observed in morning, afternoon, and evening; wind and weather in a. m. and p. m.
- Saunders, Henry D.*—Results of the meteorological observations made at the observatory at Vilna, Russia, from June, 1860, to May, 1861; and at Warsaw in 1860. (2 pages.)
- Schmid, Dr. Ernst Erhard*.—Lehrbuch der Meteorologie bearbeitet von Dr. Ernst Erhard Schmid, Professor zu Zena. Nebst einem Atlas von 21 tafeln. Leipzig, 1860. 8vo., pp. 1010. Atlas von einundzwanzig Kuppertafeln zu Ernst Erhard Schmid's Lehrbuch der Meteorologie. (Allgemeine Encyclopädie der Physik, xxi. Band.) Leipzig, 1860. Oblong 4to.
- Sheldon, H. C.*—Monthly and annual summaries of observations at Providence, R. I., during the year 1861; published in the "Evening Press."
- Smith, Rev. L. M. S.*—Summary of observations made at Mill Point, Michigan, during the year 1861; published in the "Grand Haven News."
- Smallwood, Dr. Charles*.—Contributions to Meteorology for the year 1860, reduced from observations at Isle Jesus, Canada East, by C. Smallwood, M. D., L.L. D., Professor of Meteorology in the University of McGill College, Montreal. 8vo., pp. 4. Same for 1861, 10 pages.
- State Department*.—Statistics of the weather and health at Frankfort-on-the-Mayne during the year 1861, by William M. Murphy, U. S. Consul General at Frankfort.
- Sternbergh, W. H.*—Register of thermometer and face of sky at Panama, in July and August, 1861. (Newspaper.)
- Tolman, James W.*—Summary of observations made in 1861 at Winnebago, Illinois; published in the "Rockford Register."
- Wagner, W. H., Chief Engineer of the Fort Kearney, South Pass, and Honey Lake Wagon Road Expedition*.—Record of barometer, thermometer, winds, and clouds, made on the route of the expedition, May 29 to August 16, 1860.
- Whitehead, W. A.*—Monthly and annual summaries of observations made during the year 1861, at Newark, New Jersey; published in the "Sentinel of Freedom and Weekly Advertiser."
- Unknown*.—Summary of the meteorology of St. John, New Brunswick, for October, 1861, in the "Morning Freeman" of November 9, signed "M."

CATALOGUE OF ENGRAVINGS

PRESENTED TO THE SMITHSONIAN INSTITUTION BY C. B. KING, DECEMBER, 1861.

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1. Jupiter and Leda. From a picture by F. Vieira, a Portuguese.
 2. Apollo. *Cazenave, del et sculpt.*
 3. Venus and Adonis. B. West. (Bn. 1738, obt. 1820.)
 4. Jupiter and Semele. West. *Cook, sculpt.*
 5. Alfred the Great. West. *Sharp, sculpt.*
 6. Adoration of Virgin. Rubens. (Bn. Cologne, 1577, obt. 1640.)
Sayers, sculpt.
 7. Mucius Scevola. Rubens. *Marchand, sculpt.*
 8. Massacre of Innocents. Rubens. (Engraved by Pontius, 1643.)
 9. Landscape. J. Asselyn. (Flemish, 1610 and 1660.) *Major, sculpt.*
 10. Dividing the Booty. Simonini. (Bn. Parma, 1689, obt. 1760.)
Vivares, sculpt.
 11. Christ in Tempest. Rembrandt. (Bn. 1606, obt. 1665.)
 12. Trial of Christ. (Etching, 1636.) Rembrandt.
 13. Nymphs Bathing. Dietricy. (Ser. 1712.)
 14. St. Sebastian. Titian. (1477 to 1576.) *Cunego, sculpt.*
 15. Charles Seymour. Titian. *Baron, sculpt.*
 16. Apollo. (1590)
 17. Paris and Helen. (Unknown.)
 18. Virgin, Child, and St. John. Van Dyck. (Bn. 1599.) *V. Green, sculpt.*
 19. Charles I and Duke d'Espernon. Van Dyck. *Baron, sculpt.*
 20. Charles I and Court. Van Dyck. *Baron, sculpt.*
 21. Viscount Fordwich. Van Dyck. *Baron, sculpt.*
 22. Cartoon, the Annunciation. (Coll. Soc. Jesus.) Cornelio.
Engraved 1571.
 23. Golden Calf. N. Poussin. (1594, 1665.) *Baudet, sculpt.*
 24. Woman taken in Adultery. N. Poussin.
 25. Architectural Designs. M. Angelo. 6 plates.
 26. The Cardinal Virtues. Domenichino. *Frey, sculpt.*
They consist of four plates, viz :
A. *Justitia.*
B. *Temperantia.*
C. *Fortitudo.*
D. *Prudentia.*
 27. Bacchanals. Cesium.
 28. Battle Scene. (Alex. Great.) Pietro Berretini, born 1596,
called Da Cortona. Florentine.
 29. Battle Scene. (Unknown.)
 30. Diana and Acteon. P. Morelze. Dutch, 1571. *Mætham, sculpt.*
 31. Scene from Roman History. Giulio Romano. (1492, Rome.)

32. Scene from Roman History. Giulio Romano.
33. Dance of the Hours. Giulio Romano.
34. Diana and Acteon. Carlo Maratti. (Bn. 1625.)
35. Mary Washing Christ's Feet. P. Veronese or Cagliari. (Bn. Verona, 1532.)
36. Ancient Naval Show in Circus. P. Veronese.
37. Last Supper. P. Veronese. *Saenredam, sculpt.*
38. Le Testament Dechire. J. B. Greuze. (French, 1726.) *Levabeur, sculpt.*
39. Le Veuve et Son Cure. J. B. Greuze. *Levabeur, sculpt.*
40. Le Gateau des Rois. J. B. Greuze. *Flipart, sculpt.*
41. Death of Oedipus. Fuseli. (Swiss. Lived in London. 1741—1825.) *Ward, sculpt.*
42. Caractacus. Fuseli. *Birrell, sculpt.*
43. French Second Rate Ship. Vandervelde. *Tompins, sculpt.*
44. Spanish Second Rate Ship. Vandervelde.
45. Nymphs Bathing. Jos. Vernet. (Bn. 1714.) *Laurie, sculpt.*
46. Celadon and Amelia. R. Wilson, R. A. (1714—1782.) *Woollett, sculpt.*
47. Mine of Fahlun. Vanlerberghe. *Malgo, sculpt.*
48. Venus Aphrodite. Jas. Barry, R. A. (1741—1806.) *Green, sculpt.*
49. Vulture. Northcote, R. A. (1746—1831.) *Reynolds, sculpt.*
50. Heron. Northcote, R. A. *Reynolds, sculpt.*
51. Death of Captain Faulknor. Stothard, R. A. (1755—1834.) *Blackberd, sculpt.*
52. Marriage at Cana. J. B. Jackson.
53. Dutchess Yorke. Hoppner. (German. Born in London. 1759—1810.) *Dickinson, sculpt.*
54. Mrs. Whitebread. Hoppner. *Reynolds, sculpt.*
55. Duke of Leeds. Lawrence, R. A. (1769—1830.) *Meadows, sculpt.*
56. Infant Hercules. Reynolds. (1723—1838.) *Walker, sculpt.*
57. Sir Wm. Hamilton. Reynolds. *Hudson, sculpt.*
58. Duke of Clarence? Reynolds. *Watson, sculpt.*
59. George IV as Prince of Wales. Reynolds. *Haward, sculpt.*
60. Duke of Yorke. Reynolds. *Jones, sculpt.*
61. Sir J. Leicester. Reynolds. *S. Reynolds, sculpt.*
62. Lord Romney. Reynolds. *Finlayson, sculpt.*
63. Lord R. Manners. Reynolds. *Dickinson, sculpt.*
64. Mrs. Siddons as Tragic Muse. Reynolds. *Haward, sculpt.*
65. L'Allegro. Reynolds. *Watson, sculpt.*
66. Viscountess Townshend. Reynolds. *Green, sculpt.*
67. Hon. Mrs. Parker. Reynolds. *Watson, sculpt.*
68. Hon. Lady Delme. Reynolds. *Green, sculpt.*
69. Viscountess Crosbie. Reynolds. *Dickinson, sculpt.*
70. Mrs. Blake. Reynolds. *Dixon, sculpt.*
71. Lady Talbot. Reynolds. *Green, sculpt.*
72. Mrs. Tollemache. Reynolds. *Jones, sculpt.*
73. (Unknown.)
74. Balbec. (Ruins, 5 plates.)
75. Design. (Gateway to Carlton House.)

REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1861, with general estimates for the year 1862.

RECEIPTS.

The whole amount of Smithson's bequest deposited in the treasury of the United States is \$515,169, from which an annual income at six per cent. is derived of \$30,910 14
The extra fund of unexpended income is invested, as follows, viz :

In 75,000 Indiana 5 per cent. bonds, yielding..... 3,750 00

In 53,500 Virginia 6 per cent. bonds, yielding nothing during 1861.

In 12,000 Tennessee 6 per cent., yielding nothing during 1861.

In 500 Georgia 6 per cent., yielding nothing during 1861.

In 100 Washington 6 per cent., will be paid, but not collected in 1861.

Total income..... 34,660 14

Balance in the hands of the treasurer, Jan. 11, 1861.. 16,521 95

Total receipts..... 51,182 09

EXPENDITURES

For building, furniture, and fixtures..... \$1,734 62

For general expenses..... 10,899 69

For publications, researches, and lectures 10,764 96

For library, museum, and gallery of art.. 5,737 65

Total expenditure..... 29,136 92

Balance in the hands of the treasurer, January 9, 1862 22,045 17

Statement in detail of the expenditures during 1861.

BUILDING, FURNITURE, AND FIXTURES.

Building incidentals	\$906 19	
Furniture and fixtures in general	177 26	
Furniture and fixtures for museum	651 17	
		\$1,734 62

GENERAL EXPENSES.

Meetings of the board	\$66 00	
Lighting and heating	1,074 94	
Postage	389 08	
Transportation, general	656 24	
Exchanges	793 07	
Stationery	194 60	
General printing	50 16	
Apparatus	711 70	
Laboratory	161 42	
Incidentals, general	400 38	
Extra clerk hire	434 10	
Salaries, secretary	3,500 00	
chief clerk, bookkeeper, messenger, and laborers	2,468 00	
		10,899 69

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	\$3,936 85	
Smithsonian Reports	915 00	
Smithsonian Miscellaneous Collections	1,627 63	
Other publications	310 50	
Meteorology	3,059 04	
Researches and investigations	111 00	
Lectures	804 94	
		10,764 96

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books and binding	\$915 78	
Pay of assistants in library	1,141 00	
Transportation for library	126 87	
Incidentals for library	23 12	
Museum, salary of assistant secretary	2,000 00	
Transportation for museum	406 33	
Incidentals for museum	477 35	
Explorations	432 25	
Gallery of art	214 95	
		5,737 65

Total expenditures		29,136 92
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On account of the delay in obtaining the interest due from the United States at the beginning of the year, the foregoing accounts for 1861 were made up to the 9th of January, 1862.

It will be seen that the whole income during the year 1861 was \$34,660 14, instead of the estimated income of \$38,626 14. This difference is caused by the failure of Virginia, Tennessee, and Georgia to pay the interest on their bonds, and by the treasurer not having as yet collected the \$6 from the corporation of Washington.

The expenditures during 1861 were \$29,136 92, leaving \$5,523 22 to be added to the balance in the hands of the treasurer on the 11th of January, 1861, making \$22,045 17 in hand for paying in cash the expenses of the operations of the Institution as rapidly as the bills are presented.

The foregoing statement is an actual exhibit of the Smithsonian funds irrespective of credits and disbursements which have been made in behalf of other parties. For example: the Institution frequently advances money to pay for the transportation of packages in connexion with its general system of exchange, and in all such cases the money when refunded is credited to the appropriation from which the expenditure was originally made. Again: the use of the lecture room is, in many instances, granted for charitable and literary purposes without any other charge than that for the gas consumed and the pay of the necessary attendants, the whole amounting to ten dollars each night. Half of this is credited on the books of the Institution to the account of "lighting and heating," and the other half paid directly to the persons employed.

The appropriation from Congress for the preservation of the collections of the exploring and surveying expeditions of the United States has been expended as usual, under the direction of the Secretary of the Interior, in assisting to pay the expenses of extra assistants in the museum, and the cost of arranging and preserving the specimens. The sum received from this source has been credited to the museum, and has served to diminish the amount of expenditures for that object on the part of the Institution, although it has by no means been sufficient to defray all the expenses to which the establishment has been subjected, on account of the preservation and public exhibition of the specimens.

The articles intrusted to the care of the Institution are in good condition, and the work of the distribution of the duplicates of the government as well as those of the Institution is in active progress.

A part of the expenditure on the building is due to the introduction of the Potomac water, but a further expenditure during the present year will be required for the same purpose.

Although the income of the Institution during 1861 has been nearly \$4,000 less than was estimated at the beginning of the year, yet the Secretary, by a proper curtailment of the operations in view of the unsettled condition of the times, has reduced the expenditures to \$5,000 less than the actual income. All the outstanding obligations of the Institution for works which have been commenced would not exceed \$2,000, so that the establishment could to-day wind up

its affairs with \$20,000 in cash, besides the undiminished original bequest of Smithson in the treasury of the United States, and \$141,000 invested in State stocks, from which it is hoped at some future time the full interest may be received.

It is impossible, in view of the uncertainty of the future, to present even an approximate estimate of the expenditures during 1862. The committee would, however, submit the following as a general guide to the Secretary :

Estimated income	\$34,666 14
Estimated expenditure :	
For building, furniture, and fixtures.....	\$2,000 00
For general expenses	10,500 00
For publications, researches, and lectures.	10,500 00
For library, museum, and gallery of art.	9,000 00
	32,000 00

The committee have carefully examined the books and accounts of the Institution for the past year, and find them to be correct.

Respectfully submitted.

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN,
Executive Committee.

JOURNAL OF PROCEEDINGS
OF THE
BOARD OF REGENTS
OF
THE SMITHSONIAN INSTITUTION.

WASHINGTON, *January* 15, 1862.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room at 11 o'clock a. m.

Present: Hon. H. Hamlin, Hon. J. A. Pearce, Hon. E. McPherson, Hon. S. S. Cox, Hon. Richard Wallach, and the Secretary.

The Secretary stated that since the last session of the Regents the following changes had taken place in the Board, viz:

Hon. HANNIBAL HAMLIN, as Vice-President of the United States, has become *ex officio* a member of the Board. The vacancy occasioned by the death of Hon. Richard Rush, has by joint resolution of Congress, approved March 2, 1861, been filled by the appointment of Hon. WILLIAM L. DAYTON, of New Jersey; the vacancy caused by the expiration of the term of Hon. Gideon Hawley, by the appointment of WILLIAM B. ASTOR, of New York; and that by the expiration of the term of CORNELIUS C. FELTON, of Massachusetts, by the reappointment of the same gentleman.

The Secretary also stated that on the 7th of March, 1861, the Vice-President of the United States reappointed Hon. JAMES A. PEARCE a Regent for the term of six years, and on the 4th of December, 1861, he appointed Hon. W. P. FESSENDEN, of Maine, and Hon. L. TRUMBULL, of Illinois, to fill the vacancies occasioned by the decease of Hon. S. A. Douglas and the removal of Hon. J. M. Mason; and that on the 19th of December the Speaker of the House appointed Hon. S. COLFAX, of Indiana, Hon. S. S. Cox, of Ohio, and Hon. E. MCPHERSON, of Pennsylvania, as Regents for the term of two years.

In addition to the foregoing, Hon. RICHARD WALLACH having been

chosen Mayor of the city of Washington, in place of Mr. Berret, resigned, has become *ex officio* a member of the Board.

The Secretary made a statement relative to the present condition of the Institution and its operations, but as several of the Regents were obliged to leave on account of congressional duties, the Board adjourned to meet on Saturday, February 8.

SATURDAY, *February* 8, 1862.

The Board of Regents met this day at 10 o'clock a. m. in the Regents' room.

Present: Hon. H. Hamlin, Vice-President of the United States; Hon. James A. Pearce, Hon. Lyman Trumbull, Hon. S. Colfax, Hon. S. S. Cox, Hon. Edward McPherson, Hon. R. Wallach. In the absence of the Chancellor, Hon. Mr. Hamlin was called to the chair.

Mr. Pearce presented the report of the Executive Committee, containing an account of the receipts and expenditures for the year 1861, and estimates for 1862, which was read and approved.

Mr. Pearce also gave an account of the financial arrangements of the Institution, the care exercised in expenditures, the examination of vouchers, &c.

1. The disbursements are authorized by the Secretary, in accordance with the appropriations made by the Board.

2. The accounts are audited by the Chief Clerk, and in the more important cases are examined by experts as to the reasonableness of the charges.

3. The bills are next presented to the Secretary for approval and for orders on the Treasurer to pay them.

4. They are then copied in detail into a day-book in chronological order, and the amounts posted in a ledger under the heads of the different appropriations.

5. The accounts and vouchers are semi-annually placed in the hands of Mr. W. B. Randolph, (Chief Clerk of the Treasurer of the United States,) for critical and final revision, and for the preparation of a general statement of receipts and expenditures during the year.

6. At the end of the year all the books and accounts are carefully examined by the Executive Committee, and the result reported to the Board of Regents.

The Secretary presented his annual report of the operations of the Institution during the year 1861, which was read and approved.

The Board then adjourned to meet at the call of the Secretary.

WASHINGTON, *May 1, 1862.*

The Board of Regents met this day at ten o'clock a. m. in the Regents' room.

Present: Hon. L. Trumbull, Hon. Edward McPherson, Hon. R. Wallach, General J. G. Totten, Professor A. D. Bache, Dr. Theodore D. Woolsey, and the Secretary.

General Totten was called to the chair.

The minutes were read and approved.

The Secretary announced that since the last meeting of the Board Dr. C. C. FELTON had deceased, and that Congress had by joint resolution appointed THEODORE D. WOOLSEY, LL. D., President of Yale College, to fill the vacancy thus occasioned.

Professor Bache, after a few appropriate remarks, offered the following resolutions, which were unanimously adopted:

Resolved, That the Board of Regents of the Smithsonian Institution deeply mourn the loss of their fellow-regent, Cornelius Conway Felton, the distinguished President of Harvard University, whose profound learning and ready use of the rich stores of ancient and modern lore excited general admiration, while his genial temper, affectionate disposition, and open manners, endeared him as a friend to every member of this establishment.

Resolved, That in the death of President Felton our country, in the hour of its trial, has lost a wise and influential citizen, our government a warm and eloquent supporter, Harvard University a learned and efficient head, and this Institution an active and valued regent.

Resolved, That we sincerely condole with the bereaved family of President Felton, and offer to them our heartfelt sympathy in their deep affliction.

Resolved, That Dr. Woolsey be requested to prepare a suitable notice of President Felton, to be inserted in the Journal of the Board of Regents.*

Resolved, That a copy of these resolutions be communicated by the Secretary of the Smithsonian Institution to the family of the deceased, and to the Faculty and Corporation of Harvard.

Hon. Mr. Trumbull made some remarks relative to the late Judge Douglas, and offered the following resolutions:

Resolved, That in the death of the Hon. Stephen A. Douglas the Smithsonian Institution has been deprived of a most zealous friend; the Board of Regents of an active and attentive member; and the country of a distinguished and influential citizen.

Resolved, That the Board of Regents deeply sympathize with the

* Dr. Woolsey's eulogy will be found at the end of these proceedings, page 109.

bereaved relatives of the deceased, and that a copy of these resolutions be transmitted to them.

Resolved, That the Hon. S. S. Cox be requested to prepare a suitable notice of the Hon. S. A. Douglas to be inserted in the Journal of the Board of Regents.*

The resolutions were unanimously adopted.

The Secretary stated that during a recent visit of Rev. Francis Vinton to Washington he had obtained from him some additional facts relative to the Wynns estate, of which the Smithsonian Institution is the provisional legatee.

Mr. Thomas Wynns, born in North Carolina, resided for a long time at Grand Turk, Turk's Island, where he accumulated a considerable fortune, and married at an advanced age Charlotte Arthur, a daughter of John Arthur, a woman much younger than himself. He afterwards removed to Brooklyn, New York, where he died about 1851, leaving his widow and one child, a daughter. To the former he bequeathed a life annuity of \$1,500, and to the latter his whole estate, subject to the foregoing annuity. In case of the death of this daughter without issue, the estate, now valued at from \$60,000 to \$70,000, is bequeathed to the Smithsonian Institution. The property is securely invested in bonds and mortgages, and is under the care of Edw. Coffin, now residing in London, and Rev. Francis Vinton, of Trinity church, New York, as trustees. The accounts are rendered to the surrogate of Kings county, New York.

After the death of her husband, Mrs. Wynns returned to the West Indies and married Captain Anderson. She now resides, with her daughter Charlotte Arthur Wynns, in England. The latter is about seventeen years of age.

The Secretary gave an account of the circumstances connected with the money left in England by Hon. Richard Rush, as the principal of an annuity to the mother of the nephew of Smithson, and presented the following communications from Fladgate, Clarke & Finch, of London.

40 CRAVEN STREET, STRAND,
London, W. C., May 16, 1861.

SIR: We had the honor, in the year 1838, of acting professionally for the President of the United States in the suit in the English court of chancery, under which the funds for the foundation of the Institution (of which we address you as the manager) were decreed to be

* This eulogy will be found at the end of these proceedings, page 117.

paid over to him for the purpose of establishing the Institution. We have now to make to you as the manager thereof the following communication :

On referring to the papers connected with the Institution you will find that a sum of £5,015 three per cent. consols, part of the estate of Smithson, the founder, were retained in the court of chancery to answer a claim of one Madame de la Batut. That person was, in fact, entitled to a life interest in the fund, and at her death it was to revert to the President as an additional fund for the purposes of the Institution.

Madame de la Batut is now dead, so that the fund has become transferable to the President, and it will be requisite for him, or some person duly authorized by him, to take the necessary steps to obtain a transfer.

We have had some communication with the solicitor of the lady's family, who writes as follows:

"My client, Mr. La Batut, upon taking out administration to his late mother, Madame La Batut, to whom Lieutenant Colonel Henry Lewis Dickinson, by his will dated 17th July, 1819, gave half of the income of his property, for her life, will be entitled to an apportioned part of such income from the last payment, on the 22d March, 1858, to 10th September, in the same year, which would amount to about £70.

"The property originally consisted of French 5 per cent. rentes, payable 22d March and 22d September, but by order of the court a sum of £5,015 three per cent. consols was invested in the name of the accountant general in this suit, to the separate account of Mary Ann de la Batut, the annuitant, to meet the payments of the life income. By the law of France, the life income is apportionable and payable up to the time of death, and Lieutenant Colonel Dickinson having been domiciled in France at the time of his death, that law will apply to this case.

"Will you be good enough, under these circumstances, to obtain the consent of your client in presenting a petition as to the £5,015 and the arrears of dividends due thereon, to ask for the payment to my client of the apportioned sum out of such arrears, without obliging him to go to the expense of proving the law of France upon this subject. I will hand you the necessary proof of death, the expense of which can be included in the necessary costs of the application."

We should recommend that the request contained in this letter be complied with.

We have the honor to be, sir, your most obedient servants,

FLADGATE, CLARKE & FINCH.

To the SMITHSONIAN INSTITUTION,

Washington, U. S.

40 CRAVEN STREET, STRAND,

London, W. C., October 26, 1861.

SIR: Your letter of the 14th August reached us in the long vacation which has just terminated, and we hasten to reply to it.

All that will be requisite to be done in the first instance is, that we should have the authority of the President of the United States to present a petition for an order to have the fund paid to him. On our obtaining this order, a power of attorney will be sent out to the President authorizing some person here to receive from the court of chancery, and transmit to him, or to the managers of the Smithsonian Institution, the fund in question.

Having in the suit had the honor of acting for the President, it might be within our functions to present the petition even without an express authority, but we did not deem it right to do so without some communication with the President or with the managers of the Institution.

Of course, although the order might be obtained without, the fund can only be dealt with on the signature of the President.

We have the honor to be, sir, your very obedient servants,
FLADGATE, CLARKE & FINCH.

JOSEPH HENRY, Esq.,
Smithsonian Institution, Washington.

On motion of Mr. Trumbull, it was

Resolved, That the Secretary and Executive Committee consult with the President of the United States and take such action as may be necessary for obtaining the money referred to in the communication from the solicitors in London.

The Secretary stated that Congress had passed a joint resolution granting to the Institution a set of the volumes of the United States Exploring Expedition.

The Secretary gave an account of the organization of the "Establishment," and stated that although he had regularly given notice to the members, no meetings had lately been held.

The Secretary presented the manuscripts, maps and collections of the expedition to the Arctic regions of Dr. I. I. Hayes, which were referred to Professor Bache.

The Secretary made a statement relative to the system of international exchange conducted by the Institution, and presented the following letter :

HAMBURG AMERICAN PACKET COMPANY,
New York, October 21, 1861.

DEAR SIR: In reply to your favor of October 18, we beg to state that we shall be most happy to accommodate the Smithsonian Institution in furthering the wishes you express, and take on freight, free of charge, any packages which you desire to ship, be they specimens of

natural history, books, or other articles desired to be forwarded to Germany or the continent of Europe, irrespective of bulk.

Very respectfully, yours,

KUNHARDT & CO.

On motion of Mr. McPherson, it was

Resolved, That the thanks of the Board of Regents be presented to the "Hamburg American Packet Company," for their liberal co-operation in assisting to advance the objects of this Institution.

The following letters were presented by the Secretary as illustrations of the *correspondence* of the Institution:

CHATEAU OF ECLIPENDS,

Canton de Vaud, Switzerland, January 17, 1861.

SIR: I beg you to express to the Institution of which you are the Secretary my sincere thanks for the remittance which you have just made me of three volumes of your reports, (Annual Reports of the Board of Regents of the Smithsonian Institution, 1856, 1857, 1858.) The learned memoirs contained in these volumes possess great interest for me, and I am happy to testify my sense of your kindness.

Together with this letter I have forwarded to Dr. Flügel, at Leipsic, five copies of a volume, which I have but just published, on the "Lacustrine Habitations of Ancient and Modern Times," (XVII plates, 380 figures.) I would ask the favor of you to accept a copy for the Smithsonian Institution, as a slight testimony of my high appreciation. As regards the other four copies, you will confer a sensible obligation on me if you will present them, in my name, to such scientific societies of the United States as you may deem most interested in researches of this kind.

I have had the satisfaction of sending you heretofore some communications on the lacustrine habitations of Switzerland. Since then these researches have been prosecuted with success, and we are beginning to make discoveries of remains of the same kind in Wales, Germany, Scotland, and elsewhere. Africa, Asia, and Oceanica present similar constructions. The floating gardens of Mexico are referable to the same usages, and it would appear to me that you must have in your own lakes remains similar to those of Switzerland. It has seemed to me important that the discoveries of this kind made in Europe should be grouped together in one work, with the historical results which may be deduced from them. You will readily perceive, at the same time, that it is not the history of the race which is alone concerned in these inquiries, but that the natural sciences have also an important interest in them. I would venture, then, to recommend to your favorable attention and to that of your honorable colleagues a labor whose interest is by no means confined to the boundaries of Switzerland.

Be pleased, sir, to accept the assurance of my high esteem and entire consideration.

FRED. TROYON.

To the SECRETARY OF THE SMITHSONIAN INSTITUTION.

LAUSANNE, *January 7, 1862.*

SIR: I have to acknowledge the receipt of your letter dated July 18, 1861, and of a copy of my paper on *archæology*, which has appeared translated in the Institution's report to Congress printed in 1861. It is a great honor which has thus been conferred on my little tract, and I hereby express my sincere thanks for the favor. The translation is, as you remark, rather literal, but it is wonderfully correct, as far as the sense is concerned, and this is the capital point. In due course of time I hope to publish some more papers on the same subject, and I shall not fail to communicate them to the Institution.

The United States are at present going through a crisis which, for the moment, cannot be favorable to scientific pursuits. Let us hope that Providence will so lead matters that the final result shall turn in favor of the great and noble cause of liberty and of progress. Switzerland has seen sad times of intestine discord and of ferment from 1830 to 1847, when a short but decisive civil war settled the question, and now we are enjoying a state of prosperity such as we never knew before. May a similar fate await your own country.

As you mention that some more copies of my paper might be sent to me, I take the liberty of letting you know that they would be very acceptable.

Believe me, sir, to be yours, very respectfully,

A. MORLOT.

The SECRETARY OF THE SMITHSONIAN INSTITUTION.

—
ST. PAUL, *Minnesota, August 13, 1861.*

SIR: A friend of mine, Mr. Byron M. Smith, tells me that on the occasion of a short sojourn in Washington last winter he paid a visit to the Smithsonian Institution, and, amongst other things, understood that there was in preparation, under your authority, a general map of the aboriginal or other earthworks of North America.

As this is a subject in which I have always taken a great interest, I shall be pleased to assist in the compilation of such a map. If I can be informed by the draughtsman, of the *scale* intended, I will forward a correct geographical outline of the country between Lake Superior (west end of) and the Missouri river. On a map sent to-day by mail, I have marked in red the localities of such groups of *small mounds* as exist to my knowledge. Although these works are utterly insignificant when compared with those of Ohio and Wisconsin, yet a knowledge of their exact localities may be useful in connexion with inquiries in reference to the movements and history of the modern tribes.

Respectfully, sir, your obedient servant,

ALFRED J. HILL.

Prof. JOSEPH HENRY,
Washington, D. C.

ROYAL ACADEMY OF MORAL AND POLITICAL
SCIENCE OF MADRID, *Madrid, July 16, 1861.*

This Royal Academy, being impressed with the fact that nothing contributes more efficiently to the advancement and propagation of moral and political science than a frequent communication with persons devoted to its cultivation, has resolved to invite to a reciprocal correspondence all the principal learned bodies, whether national or foreign, whose studies or investigations are analogous to those of this Institute.

As this Academy is the most modern it is proper that it should propose the commerce of the ideas and theories necessary to the progress of moral and political science. And it does not hesitate an instant in sending to your Institution the account of its own commencement and organization, as well as the publications that have marked its short life.

The credit which your Institution has acquired for taking so much interest in all that favors the advancement of civilization and improvement of the people, inspires the Academy of Madrid with confidence that its wishes will be accomplished, and that the illustrious body to which it directs itself to-day will honor it with its correspondence, and accept the exchange of memorials or other works which have been or will be published in future.

MANUEL GARCIA,
Acting President.

By order of the Academy.

PEDRO GOMEZ DE LA SERRA,
Secretary.

The SMITHSONIAN INSTITUTION.

MEXICAN SOCIETY OF GEOGRAPHY AND STATISTICS,
Mexico, February 13, 1862.

DEAR SIR: After some delay this society has received your letter and the accompanying books.

The society desires me to return sincere thanks, and to say that it fully appreciates the generous offer that you make in the name of your Institution.

Our society accepts your propositions. It will soon send, in the manner that you suggest, some of its literary and scientific productions, and also those of the other learned bodies whose works you ask for. It will also take care to put in the hands of the agent you refer to, all the periodical publications as they appear.

With the highest consideration, &c., I remain,

D. V. GUADALOUPE.

The SECRETARY OF THE SMITHSONIAN INSTITUTION.

KOENIGSBERG, *November 23, 1861.*

SIR: I have the honor to apprise you of my return from England, and the result of my labors in the interest of the Smithsonian Institution; but I must first tender my thanks for having been enabled to pursue the study of American Neuroptera, to be found in English collections or described by English entomologists.

I must say that my harvest was pretty good, for in most cases I was able to remove the doubts left in my preceding work. In the collections of the British Museum, especially, I found the types of species I did not know, and some also in the collection of Mr. Westwood, at Oxford, and Mr. Saunders, in London. I hope that with these new species, received after having sent my manuscript to Washington, I can make a tolerably large supplement. But the extent of this supplement and the comparison of species already described by me will require considerable time. I therefore believe it will be more convenient to have my work published as soon as printed, and to give afterwards the novelties and corrections in a separate supplement, which will probably make a pamphlet of about eight to ten sheets. You may rest assured, sir, that I shall endeavor to perform this labor as soon and as well as possible; but since I cannot always dispose of my time, I fear, considering the extent of the labor, that it cannot be done before six months.

I find that the translation, the first eighteen sheets of which I have seen, is of perfect accuracy. Unfortunately the work itself leaves much to be desired. I must, however, consider it a consolation that for a first attempt I have attained so much, and that my work may serve as assistance to further and more fruitful researches of the entomologists of your country. I would be gratified if my, so imperfect, labor should call forth numerous rectifications and augmentations from American naturalists. At any rate the interest for the advancement of science will always urge me on to make the synopsis better and better.

I have the honor to remain your devoted,

H. HAGEN.

Prof. HENRY, &c., &c.

—

[The following letter is given as an illustration of a number of a similar character received relative to the distribution of specimens:]

HAMILTON COLLEGE, N. Y., *February 1, 1862.*

DEAR SIR: I presume the president of our college has officially acknowledged the receipt of the box of shells sent us last month from the Smithsonian Institution. We consider this donation a valuable addition to our collection, and our local papers have given very favorable notices of it. When we arrange the shells in our cabinet we intend to have printed on each ticket "From the Smithsonian Institution."

We shall be glad to receive any other objects of natural history of which you have duplicates to spare. *Skins of birds, &c., botanical specimens, fossils, and minerals* will be acceptable ; also, relics of our Indian tribes. We have a good collection of Indian antiquities mainly derived from the ancient seats of the Iroquois, and we should like to improve our collection by adding specimens from the western Indians.

Yours, respectfully, &c.,

O. ROOT.

Prof. JOSEPH HENRY.

—
OTTAWA, CANADA, *March 10, 1862.*

MY DEAR SIR : I have to-day received your valuable donation of books, for which I beg to return my most sincere thanks both to you and also to the Institution you so ably represent. They are, indeed, a most valuable addition to my small stock, and are all the more so from the fact that they were totally unexpected.

A great debt of gratitude is due by the world at large to the munificent founder as well as to the enlightened gentlemen that control the Smithsonian Institution, for the great service rendered to the cause of science by the distribution of such works as those you sent me. How many thousands are there who, although they have an earnest desire for scientific and useful knowledge, are, for the want of such works as these, unable to obtain it? As one of these allow me again to tender my most grateful thanks for your kindness.

Believe me, dear sir, yours, respectfully,

J. ARTHUR CODD.

Prof. JOSEPH HENRY,

Smithsonian Institution, Washington.

—
NEW HAVEN, *March 27, 1862.*

MY DEAR SIR : I have only time to make a few suggestions in reference to your letter.

It is very difficult to make out a list of mineral species at present. The most trustworthy authorities on the subject are Haidenjer, Kennjott, and Rammelsberg.

I think that the names, consisting of a single word, should be adopted. Where this was bestowed by the discoverer (author) of the species, I think his name should follow in small capitals; but in italics only, provided he merely changed the name from a chemical one, or a long, inconvenient compound designation, to a single one.

The well-settled species might be given in rather large capitals; those which are less settled, but at the same time probable, in smaller capitals, while the rest may appear in small type.

I object to the plan of pasting printed or even written names on specimens. It is nowhere followed in the great collections abroad. It might answer in the case of large rock specimens and fossils, but all mineralogists would exclaim against it upon choice specimens, many of which, as the single crystals, would be concealed by the

application. Indeed they very rarely use printed names at all, but instead employ elegantly written cards, each label costing about 12 or 15 cents. It would certainly confer an advantage upon our public cabinets if you would strike off sets of labels of all the important species upon thick card-paper, which might, as required, have the localities inserted with the pen. This would give uniformity to our museums, and prove extremely useful.

I would suggest that before distributing your duplicates, you retain them for six months in order to permit exchanges for things needed by your collection; such exchanges to be made at Washington. Afterwards the duplicates should be given to each of the States.

I shall be very happy to form an exchange of meteoric specimens, in order to obtain a supply of your St. Rosa (New Mexico) iron.

I am very glad you intend to bring the minerals into order. Many valuable contributions will thus be secured.

Excuse the haste in which I write, and believe me, very truly, yours,
C. A. SHEPARD.

Professor HENRY.

UNIVERSITY COLLEGE, TORONTO, *January 31, 1862.*

DEAR SIR: At the request of the faculty, students, and board of curators of Knox College, the theological institution of the Canada Presbyterian church, I have ventured to write to you on the subject of our museum.

We are anxious, by an energetic and united effort, to accomplish three things.

1. To awaken throughout the country an interest in the world of nature.

2. To collect, as far as possible, specimens illustrative of all the zoological, botanical, and mineralogical species of Canada. We think that the solution of several important scientific problems—the northern limit of species, &c.—are involved in this. The ground is being gradually occupied. The Geological Survey, the Botanical Society, the Montreal Natural History Society, the Canadian Institute, &c., are all doing their share in the work of research; but there is a wide field still open.

Our third object will be to supply societies, museums, &c., with specimens from this country. In doing this we shall always bear in mind the fact that the Smithsonian is the great central institution for the continent, and that in no other way can our ultimate object be so well attained as by working with you.

A part of our scheme was to issue circulars giving information on the best methods of procuring, preserving, and forwarding specimens.

Could you furnish us with three hundred copies of your "Directions?" We will, with your permission, append a short circular stating our plan, and appealing to the people to join with us in carrying it into execution, and then without delay try to put them all into the hands of parties who will make a good use of them. Please aid us all you can in the matter. We have just enough of articles on

hand to form the nucleus of a good museum ; for the rest we look to the future—to your kindness and to the blessing of nature's God on our exertions. If you can spare the pamphlets we will gladly remit whatever you value them at.

Thanking you most earnestly, dear sir, for the reports and catalogues, I have the honor to be, yours, very truly,

JAMES HUBBERT,

Secretary Board of Curators, Knox College Museum.

Prof. JOSEPH HENRY, LL. D.,

Secretary Smithsonian Institution.

—
ROYAL HORTICULTURAL SOCIETY,

South Kensington, W., December 21, 1861.

DEAR SIR : I am requested by the Secretary, while acknowledging the receipt of your letter of October 18th, to acquaint you that the council have much pleasure in acceding to the request that this society's journals should be sent to the various institutions therein named, with a view to interchange. A parcel will therefore be sent to Mr. Wesley in a few days for transmission to you.

I am, dear sir, yours faithfully,

HENRY J. DOWDEN.

JOSEPH HENRY, Esq., *Washington.*

—
COBOURG, CANADA WEST, *April 1, 1862.*

MY DEAR SIR : I take this opportunity for expressing my warmest thanks for your repeated kindness in furnishing me with so many valuable publications on the insects of this continent, without the aid of which my progress in the study of entomology would be but slow and difficult. I can speak for others in this country, as well as for myself, when I say that we are deeply grateful for the assistance we have received from your noble Institution; and that but for its liberality the natural sciences would have hardly made what advancement they have in this country during the past few years.

I shall be only too glad to reciprocate your kindness to the best of my ability by furthering the objects of the Institution in any way that lies in my power.

I remain, my dear sir, very gratefully yours,

CHARLES J. BETHUNE.

Professor JOSEPH HENRY, LL. D.,

Secretary to the Smithsonian Institution.

—
HONOLULU, SANDWICH ISLANDS,

February 10, 1862.

DEAR SIR : I am in receipt of your favor granting me a suite of the duplicates of the shells of the northwest coast of America in the hands of Mr. Carpenter.

I had, a short time previous to the arrival of your letter, forwarded to the Institution a package containing shells and rare crustacea, not included in my remittance to you two or three years since.

It is my intention to supply you a full suite of the mollusca of our islands, including typical specimens of those described by myself, and also one to Mr. Cumings, of London, whose collection I learn from Dr. Gray will be eventually added to the British Museum.

I venture to ask of you an addition to my library, of the Reports of the Smithsonian Institution. I have purchased the "Contributions to Knowledge," but the Reports are not on our islands. One in particular I am wanting, which I learn contains a catalogue of transactions or proceedings of scientific societies; also a few copies, say half a dozen, of the Check List of the shells of North America, published by the Institution. Should you be pleased to furnish me the above, be so good as to forward them to Bailliere Brothers, New York city, who send me a box of books every few months.

I have been attempting to invent a simple apparatus for the measurement of the tides at our islands, but do not succeed very well. Natives cannot be depended on for watching any such instrument. It should be self-registering. I am satisfied that a register of winds should be kept in connexion with it, and perhaps also a barometrical one. If you take any interest in such researches I would be pleased to hear from you in regard to them as to assistance or advice.

I remain yours truly,

W. H. PEASE.

Professor JOSEPH HENRY,
Smithsonian Institution.

[NOTE.—Dr. Bache, of the Coast Survey, has lent Mr. Pease a tide-gauge on the responsibility of this Institution.]

—
CIRCULAR OF THE INSTITUTE OF RUPERT'S LAND,
Assiniboia, February, 1862.

We announce this institute to the public, knowing our many disadvantages, but still with a lively hope that our labors will be rewarded with some good results. Our numbers are small; but we have among us many who will devote the greater part of their time to collecting and observing, and these, with their admirable opportunities, cannot fail to accomplish much good work. Already we have the nucleus of a library. Specimens are coming in faster than we can take care of them. Necessaries for collecting and observing are being distributed and communications have been received.

We will shortly be presented with £150, by the friends and admirers of Sir George Simpson, for the purchase of a "Simpson" Telescope, and £60 from the friends of the late much esteemed Dr. Bunn, for the purchase of achromatic microscopes. And now, with this commencement, we feel the right, and do ask for countenance and assistance from scientific men and societies in all countries, promising, in return, all that energy and zeal can do in the cause of science.

A prospectus accompanies this circular, giving all the necessary information, and we would ask communications from all to whom those

are sent, with any requests, observations, or information by which we may benefit them, or they us.

WILLIAM MACTAVISH,
JOHN SCHULTZ,
Secretaries.

The SMITHSONIAN INSTITUTION.

WASHINGTON, D. C., *March 27, 1862.*

SIR: In compliance with your suggestion, I beg to set before you a few facts respecting Liberia College, in the republic of Liberia, West Africa.

1. The college is the offspring of the benevolence of citizens of Massachusetts who, in 1850, organized themselves into an association for educational purposes in Liberia, with the title of "Trustees of Donation for Education in Liberia," and an act of incorporation was obtained the same year from the legislature of Massachusetts.

2. Their sympathy and exertions have been so generously seconded that the trustees have been enabled to erect a capacious and substantial building on the heights of Monserrada, in the city of Monrovia, the capital of the republic. The college building is three stories in height, with piazzas surrounding it; with dormitories capable of accommodating between thirty and forty students, apartments for two professors and their families, lecture and dining rooms, chapel, &c. This building, the material of which is brick, cost nigh \$30,000, and is now finished. The college building has been presented, as a gift, to the republic of Liberia, for a *national institution*, and is to be governed by a body of Liberian trustees, nominated by the President of the republic, and elected by the senate.

3. Besides the above expenditure, that is for the building, the "Trustees of Donations," &c., have, under their own control, at interest, an endowment of about \$30,000, and a sum of about \$40,000 has been left in legacies, for the purposes of Liberian education, and is under the control of other colonization societies, which will, without doubt, be ultimately appropriated to the ends of the Liberia College. A further sum of \$50,000 is promised for the Liberia College by the several members of an eminent family in New York, in lieu of a like sum left by their father on his decease, for the college, but which was lost by a legal decision.

4. Liberal donations of minerals and large gifts of books have been made to the college, both by distinguished individuals in this country and by Harvard and Yale Colleges.

A faculty has already been elected; two of its professors inaugurated; and the college has already, this year, commenced operations.

The undersigned, authorized by the *American* trustees for the purpose, respectfully requests the addition of the publications of the Smithsonian Institution to the collections already made for the Liberia College.

I am, sir, your obedient servant,

ALEX. CRUMMELL.

Prof. HENRY.

RECOMMENDATION OF SHEA'S INDIAN LINGUISTICS, REFERRED TO IN THE SECRETARY'S REPORT.

We recommend Mr. Shea's series of grammars and dictionaries of the Indian languages to the attention of the Smithsonian Institution, and think that a subscription which will insure the continuance of the series will be eminently within the scope of the foundation, by preserving a number of rapidly perishing monuments of human knowledge, and securing to posterity, in the languages of the native tribes, the surest clue to their origin and affinities.

E. B. O'CALLAGHAN.

GEORGE LIVERMORE.

JNO. V. L. PRUYN.

GEORGE H. MOORE.

S. B. WOOLWORTH.

GEORGE W. RIGGS, JR.

JARED SPARKS.

PETER FORCE.

GEORGE GIBBS.

MR. SHEA'S ACCOUNT OF HIS LIBRARY OF AMERICAN LINGUISTICS.

With the increasing interest felt in the science of ethnology, much attention has of late been given to the study of the languages of the aboriginal tribes of America, and it must be confessed that more philosophical research, talent, and investigation have been bestowed upon them in Germany than in our own country. Yet the science is still in its infancy. Relying on crude or hastily taken vocabularies, which often confound different languages, many have set on foot theories, and entered into criticisms, which fall to the ground on the examination of a carefully prepared grammar or dictionary of the language. Fortunately, of very many American languages such works exist, often the labor of early missionaries, whom a long residence with a tribe, a knowledge of their habits, manners, and usages, enabled to write with accuracy and judgment.

Very few of these works were printed. Most have remained in manuscript, and are liable to perish by accident. Every investigator knows that many which survived till a few years since are now irrecoverably lost.

The language of a tribe is its most important relic. The mechanical arts were rude, and the remains so scanty, that mound and bone pit, and deserted village, have given us scarce a clue to the history of the peoples to whom they belonged. But language is the great key to the affinities of the tribes, and often enables us to trace their migrations, and in all cases to determine their kindred.

We owe it to posterity to allow the work of destruction to go no further, and to put in a permanent form every work now in manuscript, giving the grammatical structure or a full vocabulary of an Indian dialect. Our national honor is interested, and the learned abroad even now begin to wonder at our indifference.

Impelled by a desire to save these works, I began a series of them, printing a few copies of each, from the original manuscripts, my object being to preserve them; and six grammars or dictionaries of dif-

ferent tribes have already been issued. So much, however, is yet to be done, that I appeal to the public libraries, the historical societies, and literary institutions of the country, as well as to ethnologists, here and abroad, to aid me, by subscribing to the series, as the greater the number of subscribers, the lower the works can be afforded, and the greater the number of volumes that can be issued.

The works are handsomely printed on good paper, and carefully edited, forming a series of royal 8vo. volumes creditable to any collection.

NOW READY.

- | | |
|---|--------|
| 1. A French Onondaga Dictionary. From a manuscript of the seventeenth century | \$4 00 |
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| 6. A Grammar of the Yakama Language. By the Rev. M. C. PANDOSY | 2 50 |

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8. Vocabularies. Collected by the late W. W. TURNER.
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11. Potier's Radical Words of the Huron Language.
12. Bruyas' Radical Words of the Mohawk Language.
13. A French-Illinois Dictionary.
14. Potier's Huron Grammar.
15. Lefevre's Vocabulary of the Montagnais Language.
16. Bruyas' French-Mohawk Dictionary.

Various others will be added, and, if encouragement is given, the series will include an English translation of Molina's "Mexican Dictionary."

JOHN G. SHEA,
83 Centre street, New York.

The volumes of the series may be ordered of Trübner & Co, London ; Charles Reinwald, Paris ; B. Hermann, Leipzig.

The Board of Regents, having examined the library, collections, museum, &c., adjourned *sine die*.

EULOGY
OF
CORNELIUS CONWAY FELTON, LL.D., &C.,
ONE OF THE REGENTS OF THE
SMITHSONIAN INSTITUTION.

PREPARED AT THE REQUEST OF THE BOARD, BY THEODORE D. WOOLSEY, LL.D., PRESIDENT OF YALE COLLEGE.

At a meeting of the Board of Regents of the Smithsonian Institution, held May 1, 1862, Professor Henry, the Secretary, having announced the death of Dr. Felton, one of the Regents, Professor Bache made a few appropriate remarks, and offered the following resolutions, which were unanimously adopted:

Resolved, That the Board of Regents of the Smithsonian Institution deeply mourn the loss of their fellow Regent, CORNELIUS CONWAY FELTON, the distinguished President of Harvard University, whose profound learning and ready use of the rich stores of ancient and modern lore excited general admiration, while his genial temper, affectionate disposition, and open manners, endeared him as a friend to every member of this establishment.

Resolved, That in the death of President Felton, our country, in the hour of its trial, has lost a wise and influential citizen, our government a warm and eloquent supporter, Harvard University a learned and efficient head, and this institution an active and valued Regent.

Resolved, That we sincerely condole with the bereaved family of President Felton, and offer to them our heartfelt sympathy in their deep affliction.

Resolved, That Dr. Woolsey be requested to prepare a suitable notice of President Felton, to be inserted in the journal of the Board of Regents.

Resolved, That a copy of these resolutions be communicated by the Secretary of the Smithsonian Institution to the family of the deceased, and to the faculty and corporation of Harvard.

EULOGY.

The duty has been laid upon me of preparing a brief tribute to the memory of Cornelius C. Felton, late a Regent of the Smithsonian Institution. I undertake this office the more readily, because a friendly and most pleasant acquaintance of nearly thirty years standing, cemented by common pursuits and unbroken by any of those jealousies which sometimes divide men of the same literary calling, has

enabled me to form a definite opinion of the worth and services of one whose death the country, in common with Massachusetts and with Harvard University, deplores.

Cornelius Conway Felton, the son of worthy but by no means opulent parents, was born at West Newbury, Massachusetts, November 6, 1807. The first decided impulse in the direction of scholarship and of a taste for letters was given to him by Simeon Putnam, who kept a private school at North Andover, with whom he remained as a pupil a year and three months. In this year and a quarter prior to his entrance into college, Putnam awakened so great an enthusiasm in the mind of his pupil that the latter, according to a statement in manuscript drawn up by one of his friends, "read Sallust four times, Cicero's Orations four times, Virgil six times, Dalxel's *Græca Minora* five or six times, and the poetry of it till he could repeat nearly all of it from memory, the Annals and History of Tacitus, Justin, Cornelius Nepos, the Anabasis of Xenophon, four books of Robinson's Selections from the Iliad, the Greek Testament four times, besides writing a translation of one of the Gospels, and writing a translation of the whole of Grotius de Veritate, which he brought in manuscript to college; also he wrote a volume of about three hundred pages of Latin exercises, and one of about two hundred pages of Greek exercises, and studied carefully all the mathematics and geography requisite to enter college." That the severe study necessary in order to do all this in so short a time might be detrimental to his health will be readily believed. He suffered from these overstrained efforts during his residence in college and afterward. Still he continued his course of earnest study through his college life, devoting a good deal of spare time to extra Greek, and forming an acquaintance with several of the modern languages and with the Hebrew. Besides which he contributed to his own support in several ways, especially by keeping school during parts of his sophomore and junior years, and in the latter year by teaching mathematics for six months in the Roundhill school at Northampton, under Messrs. Cogswell and Bancroft. He was prepared, by this introduction into the art of teaching and by his excellent scholarship, for the employment in which he was engaged for two years from the time of his graduation—the charge of a high school at Geneseo, New York, which he undertook in company with two of his classmates. From Geneseo he was called back, in 1829, to his Alma Mater to fill the office of Latin tutor, from which department he was transferred the next year to the Greek. His election to the chair of college professor in 1832 showed the estimation in which he was held by the authorities of the University. On the resignation of Dr. Popkin in 1833, who had the chair of Greek literature upon the Eliot foundation, Mr. Felton was appointed his successor, and continued in this professorship until his elevation to the presidency in 1860. Thus thirty years of his life were spent in cultivating and teaching Greek letters.

As a Greek scholar, he was not surpassed for breadth and accuracy by any other in the land. His nature was many-sided, and he strove after complete scholarship both in what pertained to the language

and in what pertained to all the branches of the literature of the Hellenic race. Yet, like every other scholar, he had his favorite departments of pursuit, while other sides of it had less attraction for him. To linguistics and general philology and to the verbal side of Greek learning he was not so much drawn as to all the manifestation of the Greek mind and life. Here again it was Athens in her palmiest days; it was her unrivalled dramatic poets, and especially that prince of the ancient comedy, who disclosed to us the life of Athens at the pinnacle of her renown, and when she was sliding down from her eminence—it was this age and these monuments of Greece which had the greatest charms for him. The spirit of Aristophanes lodged in Professor Felton; he had the same sense of the ludicrous, the same keen judgment of character, the same underlying earnestness of patriotism, the same political conservatism.

A mind which had such a strong relish for exhibitions of life in the concrete forms would be apt to convey pleasant and profitable instruction. Professor Felton seems to have been a very genial instructor, clear in his conceptions and explanations, sufficiently strict in grammatical analyses and in keeping his pupils to their tasks, and yet relieving the tedium of the recitation room by lively illustrations of the author read, so that the lesson was not more a task than a pleasure, enriching and beautifying everything by reference to ancient art, as well as by a pure manly taste which went along with its whole scholarship.

This æsthetical power of his mind deserves a more distinct mention. He had within him a love of art, and his judgment, natively sound, was improved by devotion to a language and a literature which cultivate the taste more than any other. To him, therefore, the life of Greece consisted not solely in its poets, orators, historians, and philosophers, but in the euphonies of its words, in the rythm of its periods, in its wondrously exquisite and varied poetical metres, in its simple but grand architecture, in those works of its sculptors and founders which immortalized over again the materials of a literature already immortal.

Here we may add that he had two opportunities of inspecting the monuments of Greek art, and of visiting that land where so many of his thoughts had dwelt. In 1853 and the following year he devoted five months of a European tour to Greece, ancient and modern, to her present life and the remains of her past glory; and again in 1858 he spent part of another summer in the same land. Whatever reminded of ancient days and enabled him to conceive more clearly and understand more fully the meaning of the ancient writers, together with those reliques of art which time and barbarism have spared—this naturally claimed his attention first; but he sympathized also with the free, hopeful, restored Greece of the present; he examined the workings of her political institutions, visited the halls of legislation at the capital, formed an acquaintance with the learned men who adorn the University of Athens, and returned in the faith that modern Greece has a noble destiny before her. He was led by his tours to connect the Greek and the Romaic languages more closely together, to urge the importance of studying the latter, and to advocate the application

of the modern pronunciation to the literature of the ancient tongue. Not long after his return from his first journey, in the year 1856, he published selections from modern Greek writers, accompanied with explanatory notes, and a little earlier enriched an American edition of Smith's "History of Greece" with a preface, notes, and a continuation of Greek History from the Roman conquest until the present time.

While engaged in the daily duties of a laborious profession, Mr. Felton found leisure to prepare for the press a number of editions of Greek authors and other works within the same department. His maiden work of this kind was an edition of Homer's Iliad, published in 1833, with English notes—which were carefully revised and enlarged in subsequent editions—and with the addition of Flaxman's illustrations. Next, in 1840, he sent forth from the press a Greek reader, containing selections from writers of the best stamp—a work which has been repeatedly printed, and has maintained its ground among the principal introductions to the study of that language. This was followed in the next year by an edition of the Clouds of Aristophanes, with an introduction and a commentary, which appeared again in a revised form and was republished in England. In 1843, in conjunction with Professor Edwards, of Andover, and Professor Sears, then of the Baptist Theological Seminary at Newton, he published a work entitled Classical Studies, consisting principally of translations from the German, his contributions being selections from the works of Frederic Jacobs. In 1844 he rendered a valuable service to classical literature by translating, in conjunction with Professor Beck, Munk's Treatise on Greek and Roman Metres. Three years afterward appeared his editions of the Panegyricus of Isocrates—that much polished closet-orator of the "old man eloquent," and of the Agamemnon of Æschylus—that difficult chef-d'œuvre of the earliest dramatist. Both of these passed into second editions. In 1849 he brought out an edition of the Birds of Aristophanes, and in 1852 "Selections from Greek Historians," namely, from Herodotus, Thucydides, Xenophon, Polybius, Diodorus Siculus, Arrian, and Pausanias. In the course of the same year appeared a tribute from his pen to the memory of his immediate predecessor in the Eliot professorship, entitled "Selections from the Writings of Dr. Popkin, with a Biographical Sketch."

These were his principal contributions through the press and bearing his own name, to the main study of his life. But we ought not to pass over his frequent lectures and anonymous writings, tending to illustrate and recommend Greek learning, such as his four courses of Lowell Lectures, and his frequent contributions to the *North American Review*.

Nor ought the briefest sketch of Mr. Felton's life to omit his literary labors beyond his own immediate province. As his mind strove to grasp universal knowledge, and as he maintained a lively sympathy with the literature of most of the cultivated nations, so, from time to time, he poured forth through the press the gatherings of his rich and many-sided mind. Among his original works we mention his

"Life of General Eaton," in the ninth volume of the first series of Sparks's "American Biographies;" his biographical notices accompanying Longfellow's "Poets and Poetry of Europe;" his articles in the *North American*, upwards of fifty, and in the *Christian Examiner*, upwards of twenty-five in number; his contributions to the *New American Encyclopædia*,* and others less elaborate in the daily journals. If with these we take into view the help which he lent in various ways to education and science, as one of the Massachusetts Board of Education, as one of the school committee for the town of Cambridge, and as Regent of the Smithsonian—to which trust he was elected on the resignation of Mr. Choate, in 1856, and re-elected for the full term of six years in February, 1861—and if we bring into account, also, his labors for a number of years in the office of Regent in Harvard University, and that at the same time he gave instructions in a school under the charge of Professor Agassiz, we shall wonder that one man, besides the duties of a very laborious professorship, was able to do so much, and perhaps wonder still more that he did it all so easily to himself and so well. It is rare, we imagine, to find a life of so much faithful, patient industry united to a temper so genial and social as his, so capable of finding entertainment and recreation on every side.

The services of such an academical officer could not fail to be prized and honored. Years before his election to the presidency of Harvard, his name was prominent among those who were thought of for that post; and when President Walker felt compelled by ill-health to retire from the station which he had filled so wisely and satisfactorily, the voice of the public anticipated the votes of the boards which constituted Prof. Felton his successor. He was inaugurated into his new office July the 19th, 1860, and those who heard his address pronounced upon that occasion, if they had not known the man before, must have felt assured that his administration would be firm and vigorous. The distinct opinion which he there avows, that no offences against civil order can be tolerated in a college which would not be borne in the wider circles of citizens—that academical walls can furnish no refuge for crimes, nor academical relations justify outrages on gentlemanly propriety, or on the feelings of fellow-students, was one which commends itself to all who are acquainted with our higher institutions of learning, and which, if united in the carrying of it out with such kindness as was manifest in the character of President Felton, would strengthen and secure everything that is good in a college life. Whatever temporary obstacle or local custom, "more honored in the breach than in the observance," might oppose for a time, it is certain that the claims of law and order would at length prevail, and the state of things afterwards become so much the better.

President Felton entered thus into his new duties, with the confidence of the wisest and best on his side, and gave himself up chiefly

* Some of these were on Agassiz, Athens, Attica, Demosthenes, Euripides, and Homer.

to administrative functions, not without deep regrets, we are sure, at leaving those pleasant toils which had filled thirty years of his life. But Divine Providence had scarcely invested him with his new authority when he was summoned away from these earthly responsibilities and labors. A little less than two years of his official life had elapsed when the complaint of which he died—hypertrophy of the heart—showed itself in an aggravated form, after having manifested its presence in his system for some twenty years. He was not, however, so ill at first but that he could undertake a journey, and it was hoped that a change of climate might do him good. Setting out for Washington—where he intended to be present at a meeting of the Regents of the Smithsonian Institution—he had reached the house of his brother in Chester, Pennsylvania, and was seized with an attack of disease during the ensuing night. Here he breathed his last, Wednesday, the 26th of February, 1862. His remains were removed to Cambridge, where a sermon on his death was preached, March the 9th, by Dr. Peabody, Preacher to the University, and appropriate resolutions, in honor of his memory, were passed by the Governing Boards, the Faculties, and others.

We have spoken of President Felton as a scholar and a worker, earnest and successful, in the field where Providence placed him. But the man is far more in the scale than the scholar. Let us then look for a few moments at the man in his traits of mind and character, and in the conduct of life.

His mind, as may have already appeared from what we have said of his scholarship, was a rounded, well-balanced, many-sided one, where no trait was deficient. Yet the predominance of the æsthetic faculty, with the attendant pleasure derived from art and the works of creative intellect, may have given that direction towards scholarship and belles lettres, towards the concrete form rather than the abstract metaphysical principle, which somewhat characterized him. His simple, correct taste, and his judgment, which estimated probabilities aright, and looked below the show and the surface, although, no doubt, cultivated by the study of language, and especially of Greek literature, must have had, beyond question, an independent natural foundation. He had a native curiosity and thirst for knowledge, which felt and grasped on every side; if you wanted to know about Jasmin, the Provençal Burns, he had read his poems, he could speak of the Finnish mythology, and in his later years especially he entered with zeal into the progress of natural science. Nor ought his keen sense of the ludicrous and his humor to be forgotten here, which made him the most entertaining of companions without undermining the manliness of his character. And the easy play of his faculties, working rapidly and smoothly, without jar or much effort, deserves especial notice.

Among the traits of President Felton's character may be mentioned kindness and sympathy, united with moral energy, courage and firmness in acting up to his convictions. His kindly nature showed itself in the forms of sociality, friendliness, and generosity reaching to self-sacrifice. His friendship extended widely beyond the borders

of his way of thinking in religion and politics, and men of various opinions and convictions sought his companionship, and partook of his regards. Few men have had more friends or fewer enemies, and yet he never shrunk from avowing his own principles. He enjoyed society, of which, by his pleasantries and other colloquial powers he was made to be the life. "He was generous," says his friend Professor Peabody, "to the last degree; no income could have made him rich, while there were the needy around him; and of time, more precious than gold, and of the wealth of intellect, he was no less lavish than of the inferior goods, which he prized only as the means of making others happy. The labor of hand and brain, which might have been employed in building up his own fame, was freely given to all who sought it. Many have been the literary works and enterprises with which his name was never connected, which owed a large portion of their merit and success to materials which he furnished, or to his advice, revision, or criticism." And the same friend bears witness to his sympathy with "every noble and generous work for human progress and well being."

If the stranger, after an evening's acquaintance, may have been led by Mr. Felton's companionableness and flow of mirth to regard him as wanting in moral earnestness, such a judgment would be pronounced hasty and superficial by the many grave and good men who gave him their friendship and respect. He by no means lacked any of those qualities which constitute the man of an earnest and dignified life. As has been beautifully said of him, "his force of character, hidden on ordinary occasions by his gentle and sunny temperament, appeared impregnable whenever it was put to the test." He had firm settled convictions and well digested rules of action; he had purposes which could not be shaken by other considerations than those addressed to the reason and conscience; he had a noble, manly courage which could carry him onward in the face of opposition. These qualities, with fidelity, uprightness, and simplicity of character, as displayed in his college duties, and in other relations of life, secured for him the esteem and respect of all.

The union of kindness and firmness with sound judgment and perspicacity made him an excellent college officer. But for his character as a ruler over students we will appeal again to what Dr. Peabody says of him: "I well remember the early years of his official connexion with the college; his fraternal sympathy with the students; his gentle discipline when forbearance was safe and right; his reluctant, yet uniform consent to sterner measures, when the cause of order and virtue demanded them; his tender consideration for those who were struggling as he had struggled, bravely and honorably against adverse circumstances; his readiness to sacrifice his own ease in aid of those who sought to transcend the required measure of study, to furnish facilities for their researches, and to contribute from the funds of his own thought and learning for their growth in knowledge. Such was his course during his entire life as a teacher; and could we number up the youth who have been animated by his example, stimulated by the genial fervor of his enthusiasm, encouraged by his patient and

unselfish devotion to their welfare, and sustained in their worthy ambition after they left these halls by his persistent and effective friendship, we should have a record of quiet, unostentatious beneficence, that would distance and belittle many life-works of world-wide and long-enduring fame."

President Felton was in his feelings and opinions, like the greater part of scholars, a conservative, not without sympathy with forward movements in society, but led by his tastes and acquaintance with the past to look with suspicion on sudden changes in the established order of things. In a similar spirit he showed no mercy towards what he regarded as false pretensions to science. It will not soon be forgotten with what zeal he followed up the spiritualists, putting their claims to the test, driving them from point to point, and exposing what he considered to be intentional fraud. In his political principles he may be described as a conservative whig, a friend and admirer of Daniel Webster. In his religious faith he was a Unitarian: Dr. Peabody characterizes him as "reverent and devout, loving the Word and Ordinances of God, meekly yielding himself to the teaching and leading of the Saviour, strong in the hope that is full of immortality."

He was twice married; the first time in 1838, to Miss Mary Whitney, who died in April, 1845, and again in September, 1846, to Miss Mary L. Cary, who survives him. He has left five children.

Such is a brief sketch of one of the recently deceased regents of the Smithsonian Institution*—a man who, by his industry and vigor of mind, made himself; a man whose genial nature and social qualities created friends for him on every side; a man who to the highest attainments in one department united in an uncommon degree a large and liberal acquaintance with the circle of knowledge; a man of fine tastes, of most kindly sympathies, of strict uprightness; a man who adorned his professorship by the best qualities of a teacher, and the mingled kindness and firmness of a wise disciplinarian, and who brought to the presidential chair of Harvard the firm purpose to raise the standard of that ancient University in everything that was good and noble.

* President Felton took a lively interest in the Institution, and actively participated in the proceedings of the Board. His communications appearing in the reports of the Board are as follows: In the report for 1857, p. 79, a report on the present of a book from Greece; p. 82, one on the purchase of Stanley's Indian gallery; p. 88, one on Professor Henry's communication relative to the telegraph; and in the report for 1859, p. 104, a eulogy on Professor W. W. Turner, and, p. 106, one on Washington Irving. In addition to which he gave several lectures on Greece, and made a number of confidential reports on communications relative to linguistics, which had been referred to him for examination by the Secretary.

EULOGY
OF
HON. STEPHEN ARNOLD DOUGLAS.

PREPARED AT THE REQUEST OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, BY HON.
SAMUEL S. COX, OF THE HOUSE OF REPRESENTATIVES.

At a meeting of the Board of Regents of the Smithsonian Institution, held May 1, 1862, Professor Henry, the Secretary, having announced the death of Judge Douglas, one of the Regents, the following resolutions were offered by Hon. Lyman Trumbull, and unanimously adopted.

Resolved, That in the death of the Hon. STEPHEN A. DOUGLAS, the Smithsonian Institution has been deprived of a most zealous friend; the Board of Regents of an active and attentive member; and the country of a distinguished and influential citizen.

Resolved, That the Board of Regents deeply sympathize with the bereaved relatives of the deceased, and that a copy of these resolutions be transmitted to them.

Resolved, That the Hon. S. S. Cox be requested to prepare a suitable notice of the Hon. S. A. Douglas, to be inserted in the journal of the Board of Regents.

EULOGY.

In February, 1854, Stephen A. Douglas, of Illinois, while a senator from that State, was appointed one of the Regents of the Smithsonian Institution, and continued a member of the Board until the time of his death, on the morning of the 3d of June, 1861. From the pursuits of his life and the peculiarities of his course, it might be thought that he was not well qualified to discharge properly the duty of a trustee of a fund intended for the increase and diffusion of knowledge among men. But this would be a mistake, for, although he had given no special attention to any branch of science, yet his mind was of that comprehensive cast which enabled him duly to appreciate the nature of the bequest and the general principles of the different plans which had been proposed for carrying it into execution. It is true, as I am informed, that before he was elected a Regent he had adopted the popular idea that the bequest was intended merely to diffuse useful knowledge among the people of the United States; yet when he came to study the precise words of the will of the founder, and caught, as he immediately did, the peculiar idea of the object in-

tended, namely, the extension of the bounds of science, and not merely the teaching of what is already known, he fully adopted the views on which the present organization of the Institution is based, and ever after continued a warm advocate and an able supporter of the measures now in successful operation for the realization of the liberal and enlightened intention of James Smithson.

In accordance with the usage heretofore observed in similar cases, a resolution having been adopted directing the preparation, for the proceedings of the Board of Regents, of a sketch of the characteristics and incidents of his life, and the duty of furnishing this having been assigned to me, I address myself to the task with an earnestness that is only tempered by my fear that I have neither sufficient time nor sufficient ability to do full justice to the memory of one whom I admired as a public man, and sincerely loved as a friend.

It is, indeed, pre-eminently fitting that the name of Douglas, so fondly cherished by the nation, and so familiarly spoken wherever American statesmanship is known, should be honored in the journals of this Institution, for whose prosperity he evinced so earnest a desire. It was not merely as one of its Regents that he showed himself the true and enlightened friend of objects kindred to those of this establishment. He ever advocated measures which served to advance knowledge and promote the progress of humanity. The encouragement of the fine arts, the rewarding of discoverers and inventors, the organization of exploring expeditions, as well as the general diffusion of education, were all objects of his special regard, whether in the councils of his State, or in the hall of the Senate of the Union.

Stephen A. Douglas was born at Brandon, in Vermont, on the 23d of April, 1813. Like many, perhaps I should say like most, of the rural neighborhoods of New England, Brandon contained a highly intelligent and energetic population, independent alike in thought, speech, and the conduct of their public affairs; and doubtless the fact of his early years having been passed under the influence of the daily life and conversation of such neighbors, had some share in imbuing the boy with the sturdy independence and resolute energy which the man was so remarkably and so triumphantly to exhibit throughout his at once brilliant and laborious career.

His ancestors were of Puritan descent; and his father was a physician of both ability and reputation, but died at a prematurely early age, leaving his widow in very straitened circumstances, if not even in actual distress. It may, indeed, be only too reasonably feared that the latter was the case, for, excellent mother as she was known to be, she yet was unable to give young Stephen the full education he so much desired and so well deserved. He attended the district school during only one-third of the year; during all except the four winter months he was engaged in the hard labor of a farm or in the shop of a cabinet-maker. In this alternation of manual labor and imperfect and interrupted schooling he continued till he was twenty years of age, when he migrated to Illinois, where he taught school for his support, while he resolutely studied law. In 1834 he was admitted to the bar, and we may judge of the character of his early efforts in the

courts from the fact that in 1835, being then only twenty-two years of age, this young man, whose short life had been so largely taxed by adverse circumstances, was elected State attorney. From that time he was continually in the public service. He was, in turn, State attorney, member of the legislature, secretary of State, judge of the supreme court of Illinois, and registrar of the land office; and subsequently he was a member of the lower house of Congress, and three times in succession he was elected by his adopted State to be United States Senator; and, as is well known, not long prior to his death he was the very popular though unsuccessful candidate for the highest executive office in the gift of the nation.

These are the prominent points in the career of Douglas, whose life, commencing in obscurity and continuing through nearly the half of its whole duration under the most adverse circumstances, ended in the full light of high position, and the full glow of popular favor. The principles which he advocated, and to which he unwaveringly adhered, as well as the measures he proposed, have been the theme of both criticism and eulogy elsewhere, but the discussion of them here would be out of place, and in violation of a rule early adopted by the Board of Regents, that in the affairs of this Institution partisan politics shall forever be unknown. The points, however, in his personal character which enabled him to obtain so important a position, and gave him so great an influence, not only over intimate friends and colleagues, but also over the public mind, may well claim our attention as a study no less important than interesting.

If continued success be the test of merit, then must all admit that Judge Douglas was no ordinary man. That success in a single effort, which may be referred to a fortunate concurrence of circumstances over which the successful man had no control, is not the true criterion of talent is a truth which must be readily admitted. But when the course of an individual is marked through a series of years by a continual advancement in the same direction, and especially when that advancement requires forecast, knowledge, perseverance, and energy, his success most assuredly is evidence of talent, if not of genius.

Courage, energy, and a working power, both mental and physical, which have rarely been surpassed, were the qualities which chiefly served him in his earlier years. The son of a poor widow, and compelled to spend in bodily labor the time which other boys of his age pass in school, he would probably have remained a poor and obscure individual had it not been for the resolute WILL to elevate himself, and the courage, force of character, and determination to ACT in accordance with that will which characterized his whole life. But of itself alone, that seemingly inexhaustible power of labor which obtained for him the suggestive sobriquet of "the little giant" would have been insufficient to effect the great success which he actually achieved, had it not been directed and aided by other mental characteristics, which some even of the warmest admirers and eulogists of the *politician* Douglas seem to me very insufficiently to appreciate.

In addition to the characteristics which I have already attributed to him, Judge Douglas was remarkable for his quick perception of the

nature of events, and of the consequences which, with almost mathematical precision, he could predicate as to their results. He had, to a wonderful degree, the power of seizing on general principles, and of making them a part of his intellectual stores to be referred to in whatever particular case he might have to deal with; and his retentive memory enabled him on the instant to call up alike a general truth, and a host of particular facts in effective illustration of his premises.

These qualities might have been modified, but could not have been increased, or even strengthened, by classical training; nay, in becoming more refined and fastidious, it is far from certain that his mind would not, at the same time, have become less robust, energetic, and bravely self-reliant.

We do not intend by this remark to throw doubt on the importance in general of that early mental discipline which is furnished by the training of the schools, but to present the suggestion that in particular cases of extraordinary native vigor of intellect, determined on a single line of action, the gifts of nature cannot be essentially improved by the moulding influence of ordinary early education. These cases are, however, the exceptions to be avoided in directing the minds of youth, and not the examples of the rule to be generally followed.

Although Judge Douglas was no scholar in the pedantic signification of the term, yet his mind was duly cultivated in the study of the law, a branch of knowledge which, when pursued merely in its details and practiced in its daily routine of office forms, may tend to obscure the perception of truth in frequent endeavors to make the worse appear the better cause, is yet in its proper study, through the expositions of Blackstone and the other systematic writers on English jurisprudence, one of the most liberalizing and enlarging pursuits to which the mind of youth or early manhood can be directed. The generalizations of this branch of knowledge were particularly fitted to improve the mind of young Douglas, and to prepare him for his future career.

But even the intellectual qualities we have mentioned are insufficient alone to account for the distinctive character of the eminence he attained. With these he might have been the dexterous pleader, the sagacious judge, the acute politician, and yet have fallen very far short of that perfect empire which he held not only over the minds of the few, but also over the hearts of the many. He had other qualities which may be cultured, but which cannot be created.

The lively sympathy with friends and associates, the intelligent and appreciating glance, the frank and hearty tone, the kindly grasp of the hand, the prompt and obviously disinterested service, these give to him to whom they belong a despotism which we are, perhaps, too proud to own, but which we cannot, if we would, resist. In the mere personal presence of Stephen A. Douglas there was a singular fascination. When you had once experienced the magic of his influence you were bound to him forever; his spirit seemed to dare you to rebel, and what was commenced by admiration for his commanding ability was consummated by his kind and genial manner. Bold, fierce, at once haughty in defiance and dexterous in fence, he necessarily

commanded admiration. But to admire is little else than to wonder; we admire a brave and gifted enemy quite as much, and, if a little terror be mingled, we may admire him even more than our true but less brilliant friend. But in the case of Douglas we loved while we admired. And this is the true key to his general popularity. His intellect conquered, but his heart secured the conquest. His innate and ineradicable kindness, and his genial manner conciliated all who fell within the influence of his power. His political and public life exhibited but the mere outward husk of the man within; it was when you looked upon the gentle amenities of his home life, upon his love and devotion to his wife, tenderness to his children, and respectful attention to his friends, that beneath that somewhat rough exterior you could discern the character it concealed.

It will not, I trust, be considered improper for me to refer to the fact that I was one among the many young men of the west who were honored by his confidence and bound to Judge Douglas by ties of enthusiastic friendship, and that therefore I speak from personal experience when I refer to the magic of his presence and the controlling influence of his character.

As I have already said, this is not the place or the occasion for entering into particulars as to his political opinions and acts, but, alike to his friends and his foes, I must say from the convictions of my head, as well as the suggestions of my heart, that history will be false to her trust if she does not record the fact that Douglas was a true patriot as well as a sagacious statesman. If he was a partisan politician, he never wore his party uniform when his country was in danger. It was a striking illustration of his character in this respect, that when the administration of our national affairs was committed to his political antagonists, he gave his hearty and generous support to the government at the moment it required his aid.

Some have lamented his death as untimely and unfortunate for his own fame, since it happened just at the moment when the politician was lost in the patriot, and when he had an opportunity to atone for past errors. But man does not change his nature so readily; Douglas was the same from the beginning to the end of his career, with views merely modified or enlarged by the expanding horizon which opened upon him from year to year, in his increasing elevation of thought and position. The words which escaped him in his last hour were the expressions of the real sentiments of his inner life.

Observant of the causes which have led to our present civil war he ever strove by adjustment to avoid their disastrous effects. "I know not," said he, "what our destiny may be, but I try to keep up with the spirit of the age, to keep in view the history of the country, to see what we have done, whither we are going, and with what velocity we are moving, in order to be prepared for those events which it is not in the power of man to thwart."

Placed at the head of the Territorial Committee of the Senate, it was under his direction that Territory after Territory and State after State were admitted into the Union. The comprehensiveness of his views was exhibited in his great speech on the Clayton and Bulwer

treaty, on the fourth of March, 1853, wherein he enforced a continental policy and refused to prescribe limits to the area over which the principles of our government might safely be extended.

His position on the Committee of Foreign Relations gave him a breadth of view in regard to our relations with other countries, which was enlarged by personal observation in foreign travel, and in special historic research. His knowledge on this subject was conscientiously applied in the way which he deemed best fitted to advance the commercial and financial interests of our whole country.

He died in the midst of the people of a district where he had been cherished and honored during the whole of his public life; in a city whose commercial and material improvement was the pride of his heart, and a type of his own character. The maturity of his growth, the fertility of his resources, and his sturdy energy, rendered his life a microcosm of the great section of our country with which he was so closely identified. We may toll the slow bell for his departed spirit, we may drape ourselves in the emblems of grief; but if his friends and admirers would truly honor his memory, they will endeavor, like him in his last days, to moderate the heat of party strife, enlarge their views of political science, and emulate his growth in moral character and clear-sighted patriotism.

GENERAL APPENDIX

TO THE

REPORT FOR 1861.

The object of this Appendix is to illustrate the operations of the Institution by the reports of lectures and extracts from correspondence, as well as to furnish information of a character suited especially to the meteorological observers and other persons interested in the promotion of knowledge.

LECTURES.

ON THE CONSTRUCTION OF BRIDGES.

BY FAIRMAN ROGERS,

PROFESSOR OF CIVIL ENGINEERING IN THE UNIVERSITY OF PENNSYLVANIA.

[Continued from Appendix to Report of 1860, p. 150]

ALL the structures for spanning openings which we have thus far considered, have been so arranged that portions of them are subjected to a tensile strain ; the materials used in them are adapted to resist such a strain, and also to receive such fastenings or connexions as will enable them safely to transmit the forces applied.

The building material, however, which is most universally at our disposal, stone, although it is admirably fitted to bear a compressive force, is not adapted to resist tensile strain, and in making use of it in bridge-building we must apply it in such form and such a manner as to overcome this difficulty.

If we have two pieces of stone, neither long enough nor strong enough to span an opening in the way of an ordinary beam, we may arrange them as shown in Figure 43, preventing them from separating below by the tie rod A B.

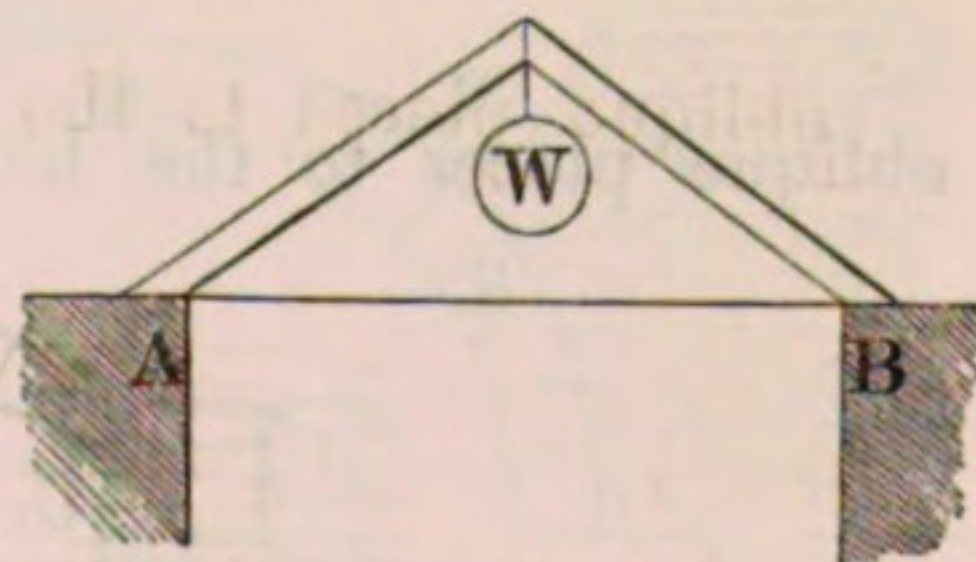


Fig. 43.

Should it be desirable that the space between the stones or timbers be left without any encumbrance, the tie rod A B may be replaced by two abutments, so firmly seated on the ground that the *thrust* of the structure will not be sufficient to push them apart or to overturn them, as in Figure 44, where the reaction of the ground takes the place of the tension rod.

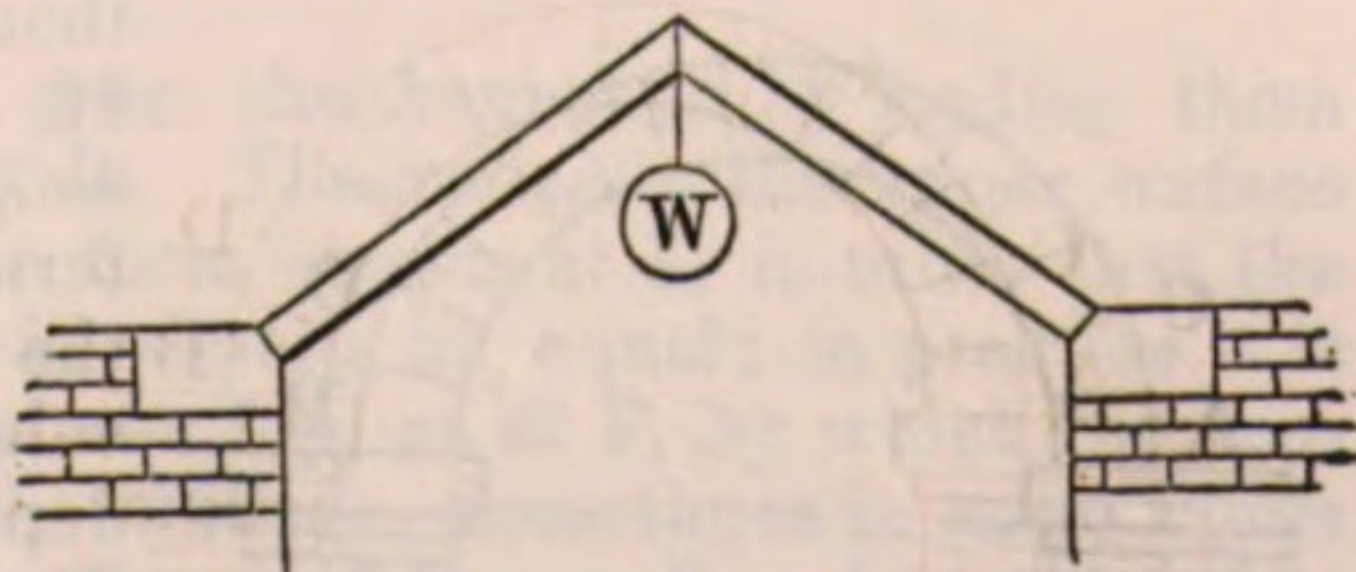


Fig. 44.

Now, if it be necessary to

sustain three loads instead of a single one, we shall have a structure such as Figure 45.

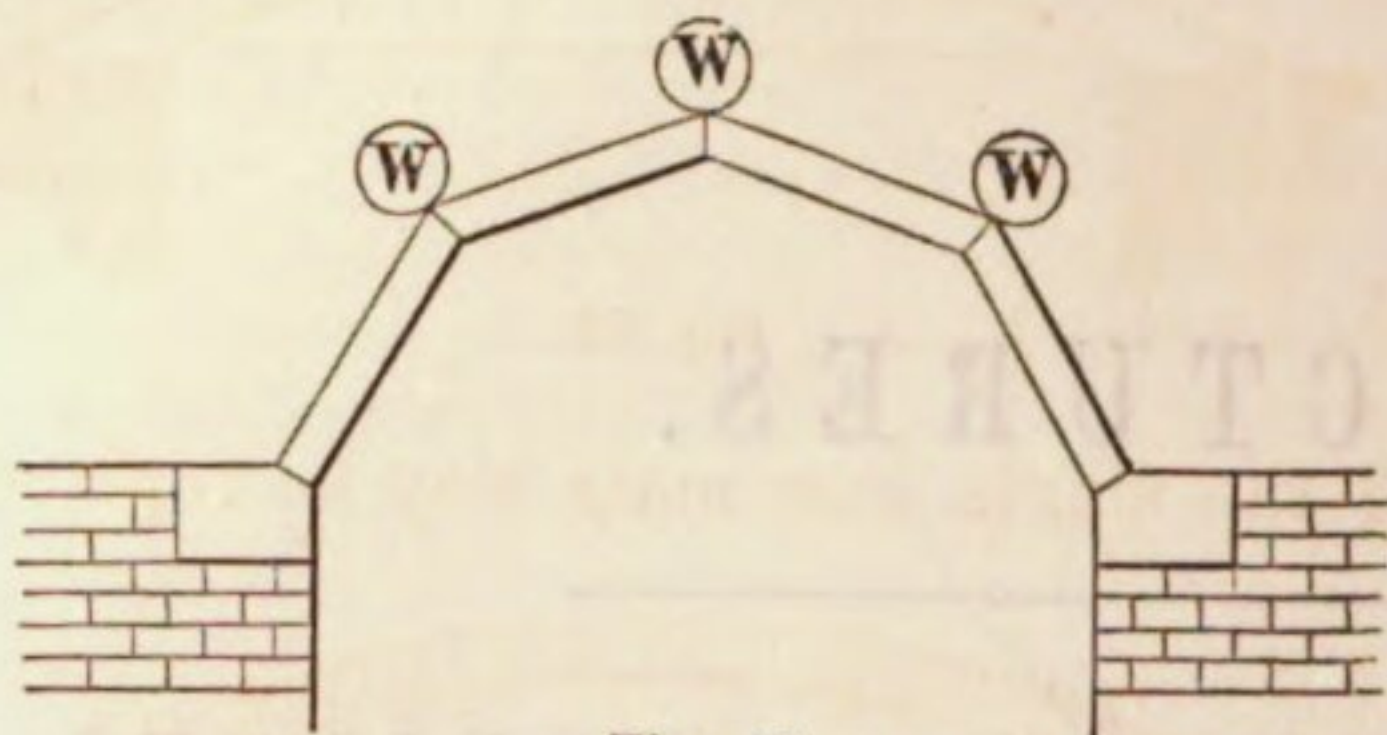


Fig. 45.

If the number of loads is very great, or, what is the same thing, if the load is distributed over the whole span, we shall have the framing in the form of a polygon of a great number of sides, or an arch, as in Figure 46.

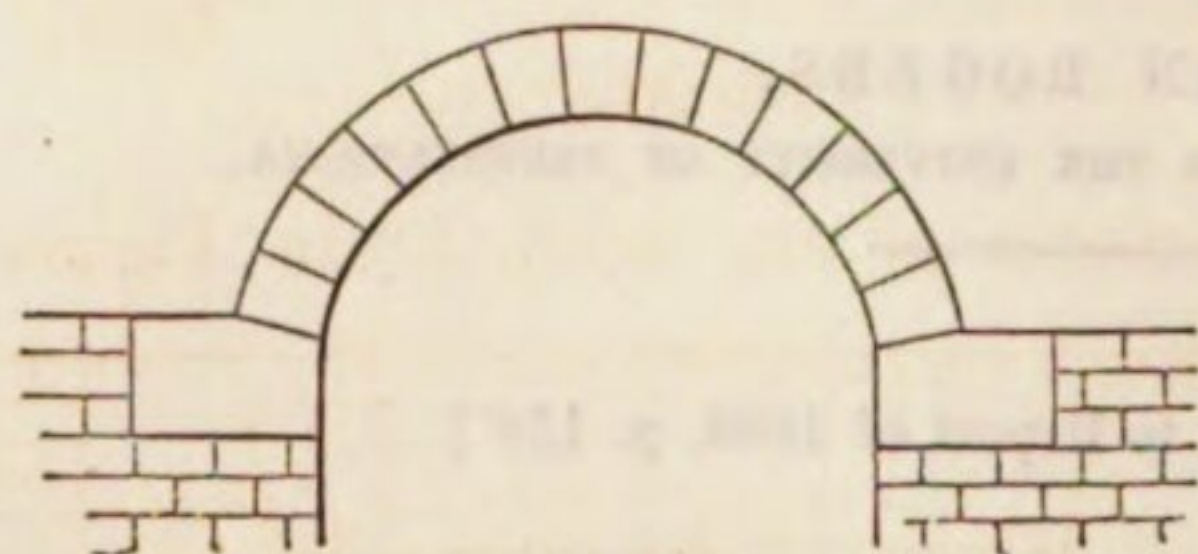


Fig. 46.

Since the pieces composing such a framing or arch are small, and are only subjected to a force of compression, they may be economically made of stone or of cast iron.

In Figure 44, by a well-known principle of mechanics, the amount of *thrust*, or tendency to separate the abutments, compared with the weight supported, (W ,) may be readily determined,

and it will be found to increase with the nearer approach of the

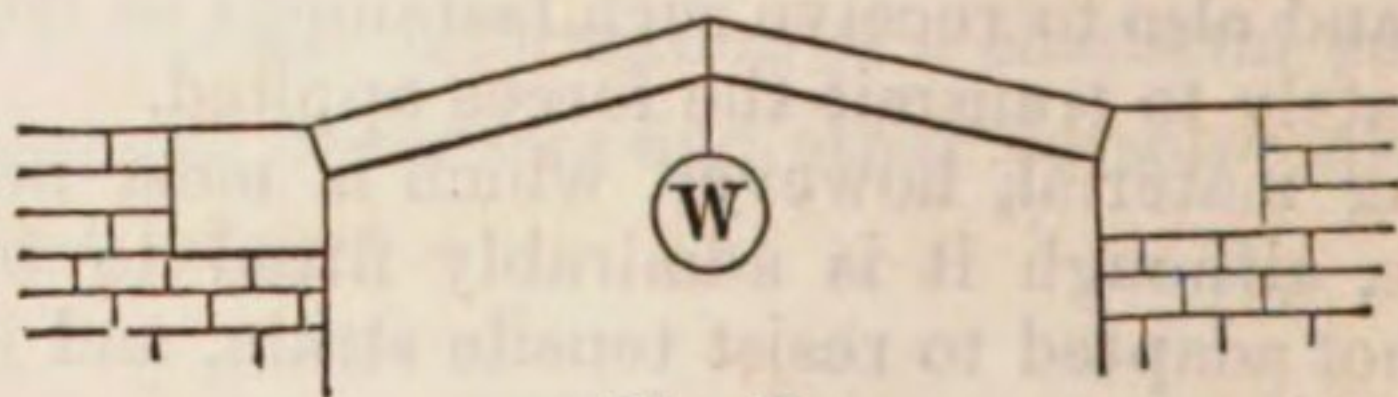


Fig. 47.

oblique pieces to the horizontal position, so that a framing, like



Fig. 48.

Figure 47, or an arch, like Figure 48, will exert a greater thrust than either Figure 44 or Figure 46, when loaded with the same weight. The distance, $A B$, is termed the rise of the arch, $C D$, the span, and upon their relative values the thrust of the arch will depend. In a semi-circular arch, Figure 49, no thrust is exerted at its very lowest points, A and B ; it does not become sensible until we

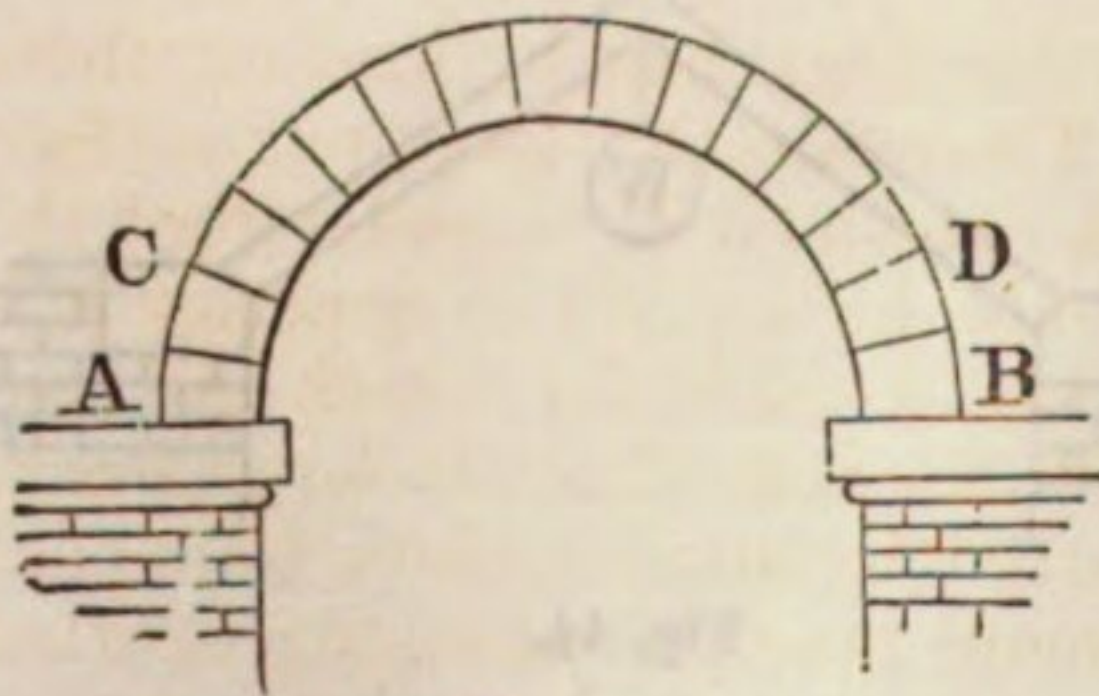


Fig. 49.

reach a point a little higher, C D, and then the arch acts as in Figure 46.

What is known as a bow-string girder, Figure 50, is only a cast-iron arch, with a tension rod, and the single iron mass may be replaced by bricks, as in Figure 51, while, still further, by taking away the tie rod and substituting the abutments, we come again to the familiar form of the arch, as in Figure 48.

In fact, we may build an arch which has no curved surfaces of any kind, as in Figure 52, in which it is evident we have sacrificed nothing of the principle by permitting the spaces above and below the dotted lines to be filled up by the projection of the arch stones.

Since the weight upon an arch acts always vertically downwards, the portion at the *crown* or top, A, Figure 53, acts with all its weight in the direction of a radius, A O, of the circle, but the portions of the load towards the *haunches*, as at B C, only act with a portion of their weight in the radial direction B O; and if we desire to equalize these radial strains, we must increase the weight upon the haunches by loading them with additional material, as at D. Theoretically the upper surface of this loading should have the form shown at E, in order that the forces acting along all the radii should be equal: in practice it is usual to build up to the level of the top, as at F, by which the conditions of the problem are nearly fulfilled. Sometimes in large works the roadway over the part E is supported by small arches, the space under them being left open, thereby more nearly conforming to what is required by the theory.

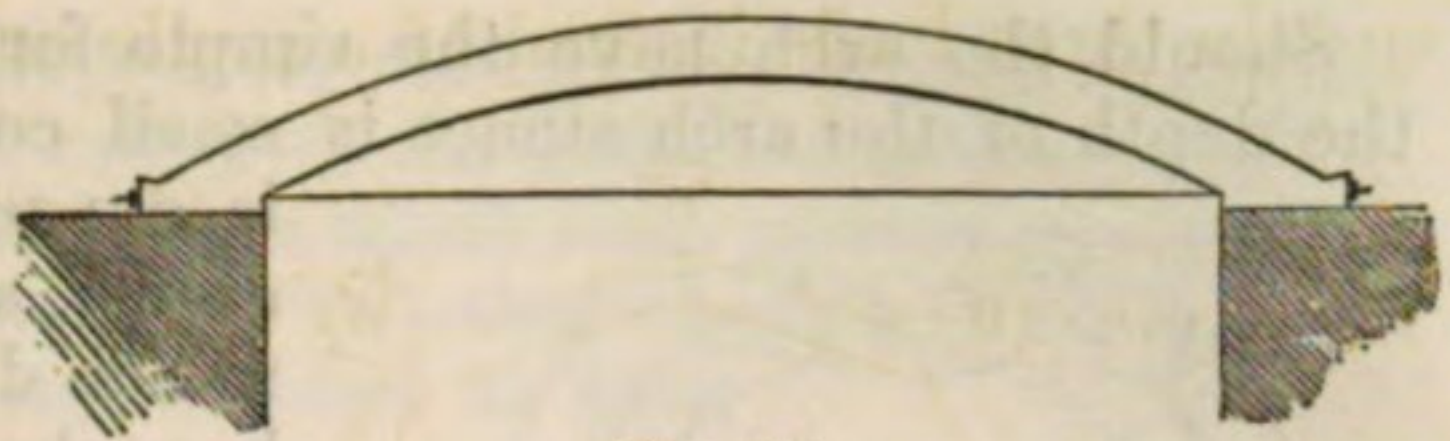


Fig. 50.

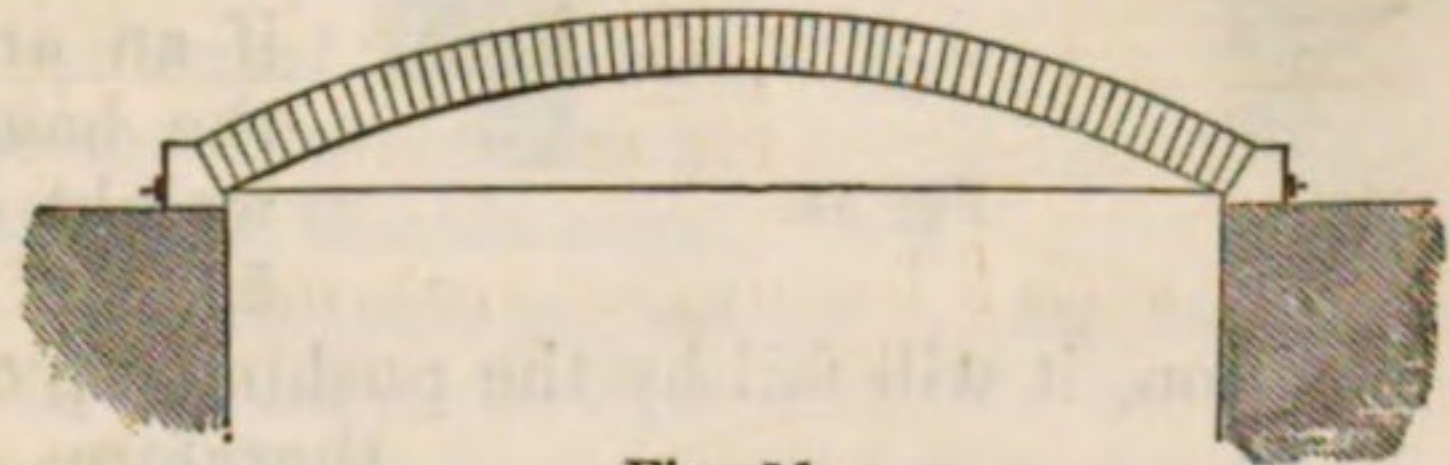


Fig. 51.

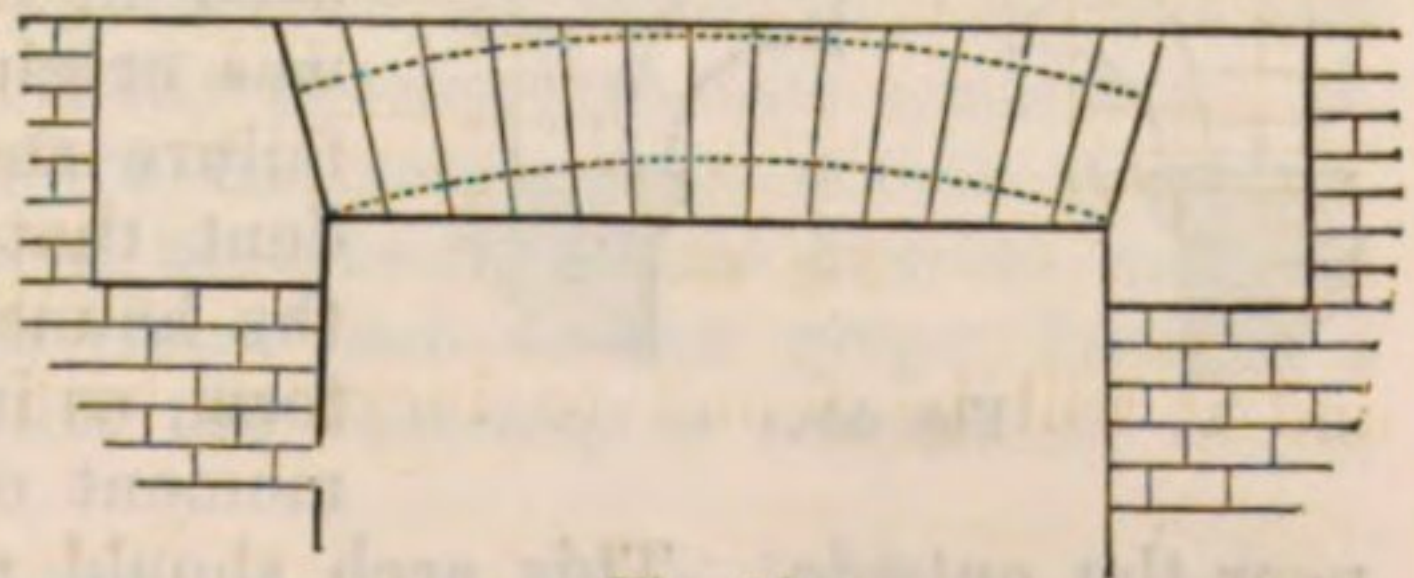


Fig. 52.

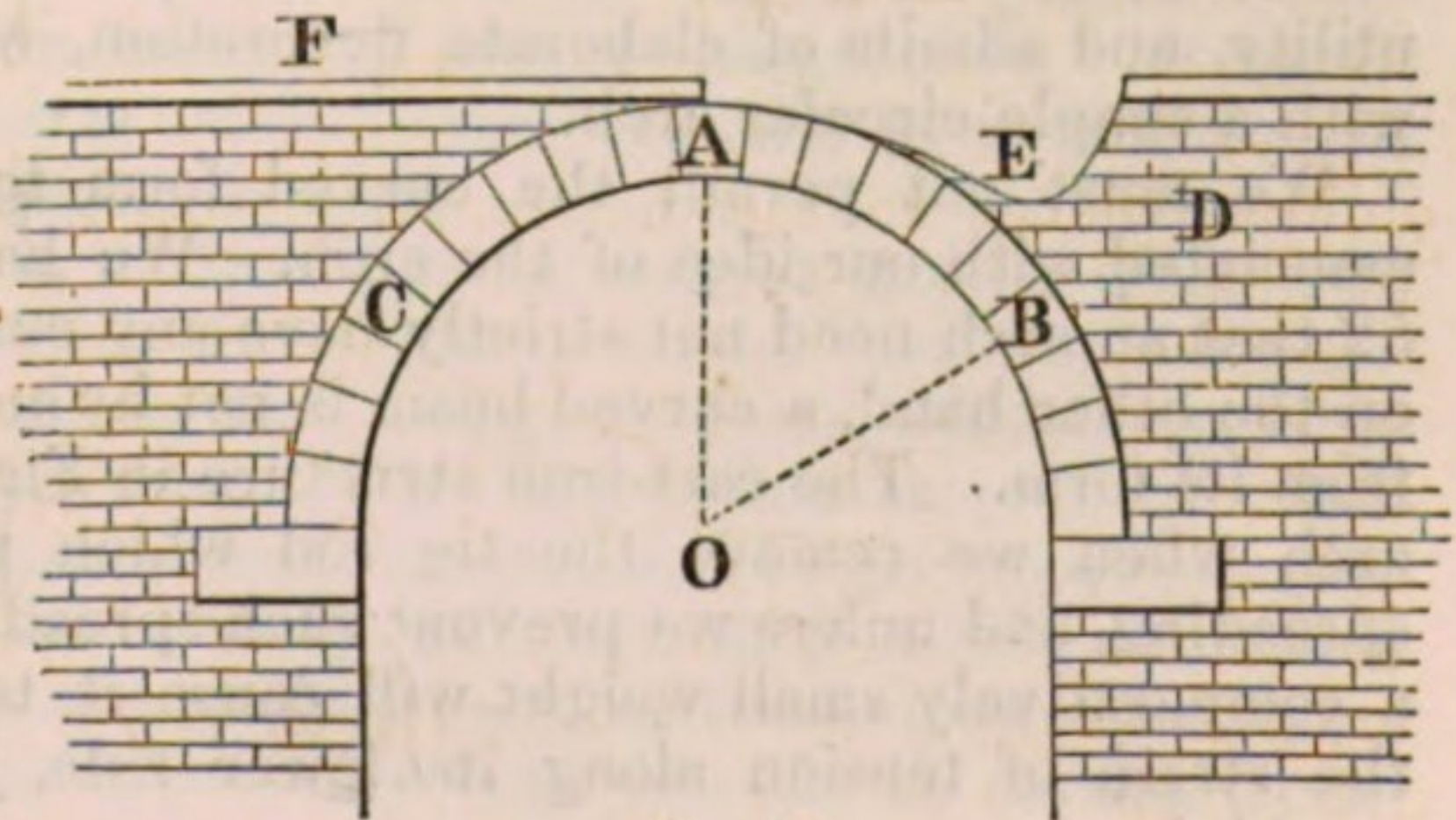


Fig. 53.

Should the arch have the simple form of Figure 46, especially if the depth of the arch stones is small compared with the span, there is danger that the weight near the crown, acting with more effect in the radial direction than that near the haunches, will rupture the arch, as in Figure 54, the crown sinking and the joint there opening on the inside, and the haunches rising. Conversely, if an arch is loaded too heavily on the haunches, as it may be by the weight of masonry at F, in Figure 53, or by soft earth in the same

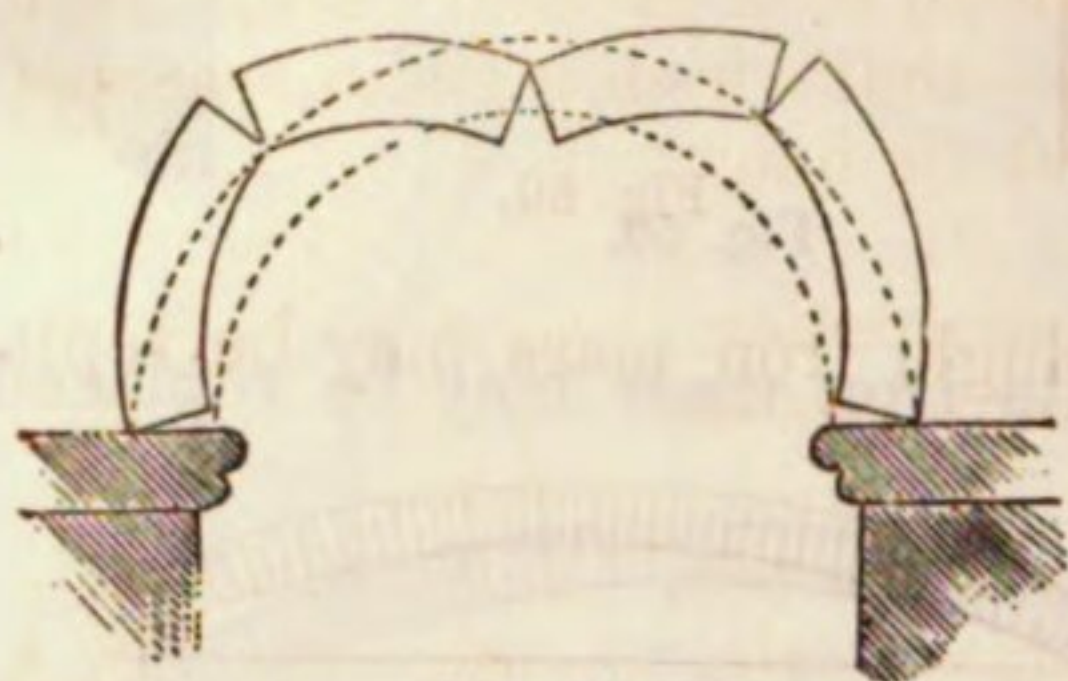


Fig. 54.

position, it will fail by the pushing up of the crown. Judgment is, therefore, required in planning such works, in order to avoid these accidents.

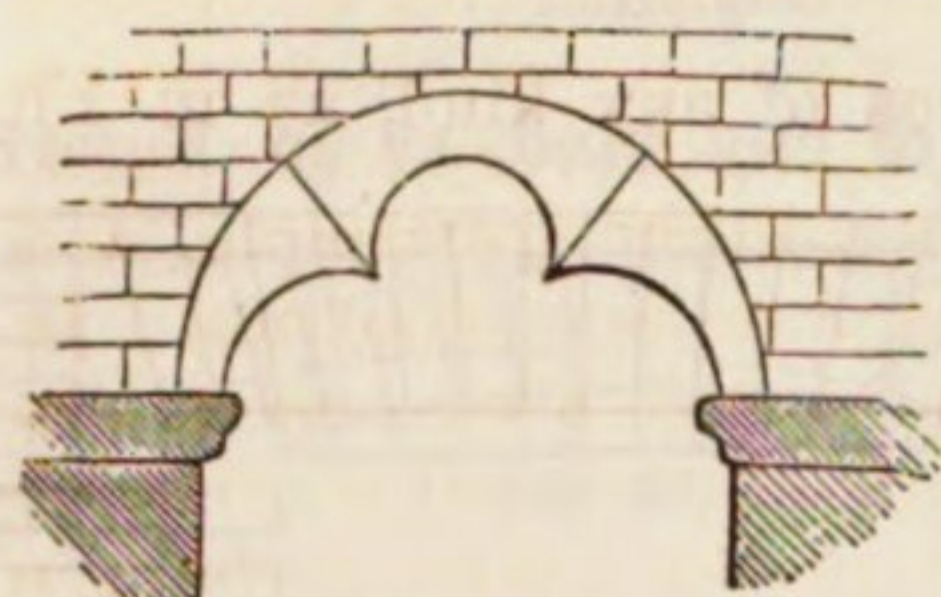


Fig. 55.

The cusped arch, Figure 55, much used in certain styles of architecture, was originally designed to prevent the failure shown in Figure 54. It is evident that the inner points or *cusps* at the haunches would resist a change of form, as in Figure 54, by increasing the moment of resistance of the particles near the outside.

This arch should properly be made of only four stones, as in the figure, and is therefore adapted to small structures, such as the heads of windows.

The form is a very ornamental and pleasing one apart from its utility, and admits of elaborate decoration, which is hardly the case with a simple circular arch.

We must not permit the curved form to become too intimately associated with our idea of the arch. We have seen in Figures 47, 52 that an arch need not strictly have any curved surface at all, and, on the other hand, a curved beam is not by any means an arch merely from its form. The cast-iron structure in Figure 50 ceases to be an arch when we remove the tie rod which prevents its ends from spreading, and unless we prevent such spreading by fixed abutments, a comparatively small weight will cause it to fail, by giving way to the strain of tension along its lower side, just as any other beam would do.

In a stone arch the wedge-shaped pieces or arch stones continually tend to press or pack more tightly together, and thus to keep up the stiffness of the structure.

Technically, the inner surface of an arch is called the *intrados*, the outer the *extrados*.

Frequently, as in Figure 49, the curves of these surfaces are similar and parallel; sometimes they differ, this being to a certain extent a matter of taste or of the fancy of the architect.

Curves other than circles may be employed for the *intrados*, according to certain necessities of construction. The ellipse, as in

Figure 59, is frequently employed, for reasons that we shall consider further on. Such curves are called by the French engineers basket-handles, (*anse de panier*.) For arches which bear no load except that of their own weight, the catenary curve—that which a chain assumes when fastened at both ends and allowed to hang freely—is sometimes used.

Circular arches may either be semicircular, (full centre,) as in Figure 49, or segmental, as in Figure 48.

Two segments of a circle of equal radius are sometimes joined at an angle more or less acute, as in Figure 56, a form known as the Gothic arch. This form is frequently used in architecture, but rarely in bridge-building. The aqueduct of Spolitto is a rare instance of its employment in an engineering structure.

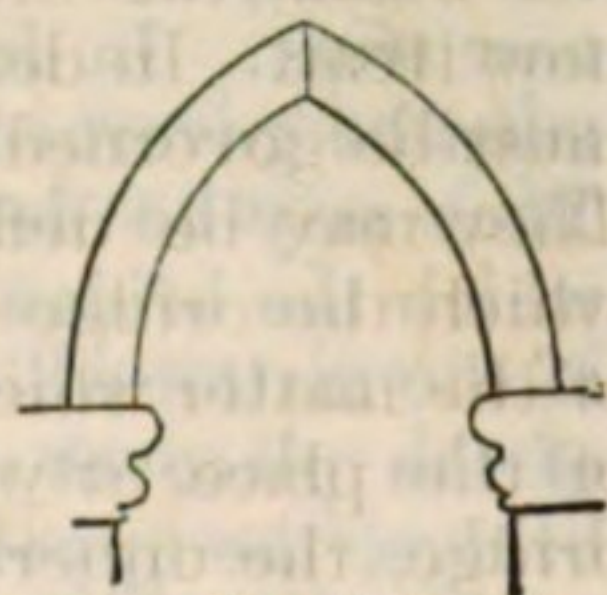


Fig. 56.

Suspension bridges, formed by stretching a rope or chain over a chasm, and supporting the foot-way from it, were very early used, since the principles involved in their construction are simple, and the materials for them are readily obtained in new countries. In parts of South America they are frequently seen across mountain chasms and streams, the material used being either flexible rods, or poles properly joined, or tough vines, such as the grape, forming a sort of rope, from two of which the foot-way is suspended or on which it is laid.

There are accounts of very ancient iron chain bridges found in India, constructed upon the same principle.

The suspension bridge may be regarded as the converse of the arch, since it is not only inverted in form, but all its parts are subjected to a tensile strain instead of one of compression. Wrought iron is the material which is naturally the best adapted to this method of construction, and is generally used.

A suspension structure, to bear a given weight, may be made with but little waste of material, since tensile strains are usually transmitted with great directness, and, being easily calculated, the minimum of material may be used. For this reason suspension works are characterized by lightness and cheapness, two great advantages.

The principal objections to them are, first, their flexibility, which can be provided against with proper care, and the space which they occupy beyond their true span—only objectionable in certain localities.

The weight of the bridge and its load tend to draw the extremities of the chains together, and if they were merely fastened to the tops of the towers which support them, these towers would be overturned. It is necessary, therefore, to extend them on the land side of the towers, and to anchor them in the ground at a considerable distance from the foot of the tower to prevent such action. In a city this is an objectionable feature, since the land chains interfere with the free passage in the streets. The fundamental principles governing the suspension bridges are so simple that it will not be necessary to dis-

cuss them more at length than we can in treating of the practical points of their construction.

There are evidently other matters to be considered in building a bridge than the mere theoretical principles involved in the action of the beam, the arch, or the suspension chain, and of these we shall now treat. In designing a bridge for a certain locality, the engineer must be governed by what are sometimes termed the *limits of location*. They may be defined as the two horizontal lines above or below which the bridge cannot go. The upper limit is fixed by the nature of the matter which is to pass over the bridge, and by the topography of the place at which it is to be built. If the structure is a foot bridge, the upper limit may be high above the surface of the stream or its banks, since pedestrians can easily mount up to almost any elevation. If it is for pack-horses or mules only, as is the case with some of the bridges of Switzerland and other mountain countries, the ascent may still be steep. For carriages the ascent must be less, and the top of the bridge must be more nearly on a level with the banks. For a railroad the upper line of the bridge must be still more nearly on a level with the surrounding country.

The other limit, or lower line, will be determined by the level of the stream, by the freshets that occur in it, and by the headway required under the bridge, if the river is a navigable one. In a locality where the stream is deeply sunk below its banks, the problem is simple; but where the country is low, and the stream apt to be swollen by freshets, the engineer must exercise considerable judgment in determining upon the best and most economical limits.

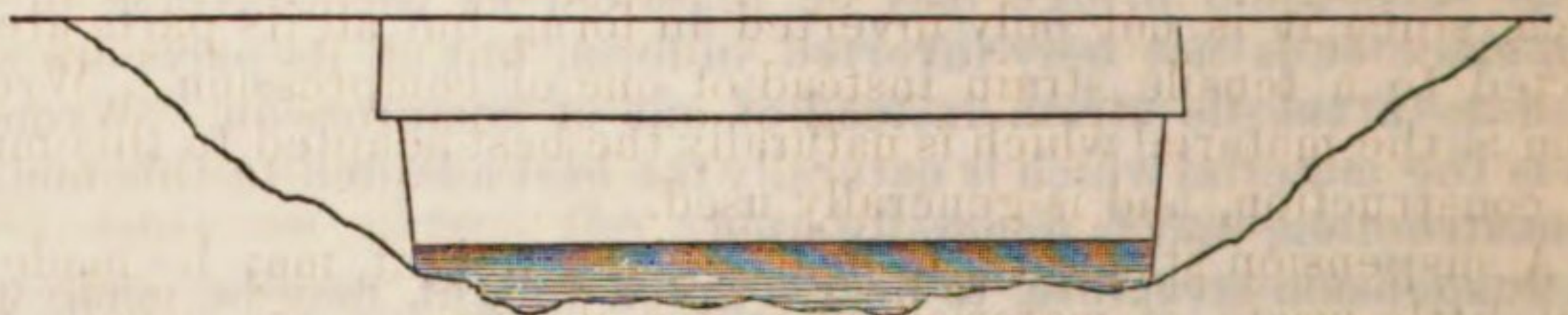


Fig. 57.



Fig. 58.

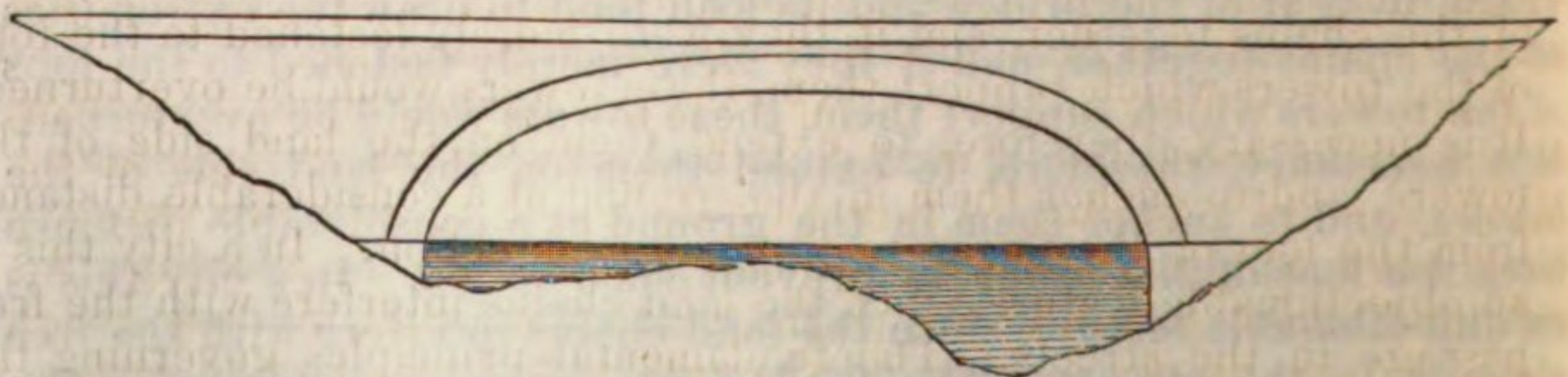


Fig. 59.

Comparing Figures 57, 58, 59, we see that the beam gives for a

given height of roadway the clearest headway under all its parts, although it is nowhere quite as high as the centre of the arch in the other figures.

In Figure 58 a small rise of the surface of the stream will much diminish the water-way just at the time when it should be the largest, a case that will not occur in Figure 57.

To avoid this the elliptical arch, Figure 59, is often used when the structure must be arched, and it presents the other advantages of increased headway and more agreeable lines to the eye.

When the engineer has determined the upper and lower limits of his intended work, (to do which he must carefully study the banks and surrounding country and collect all the information possible as to the freshets of the stream,) he must examine the ground with a view to the foundations and approaches of his bridge. Should it have but one span or bay, as in the figures, the abutments will be nearly, if not quite all, on dry land, and the difficulties to be met with in their construction will probably not be great. Should the width of the stream however be so great as to require several spans, piers must be built in the water, an operation requiring expensive and troublesome appliances.

The piers of a bridge contract the water-way and cause eddies and currents oftentimes very disturbing to the navigation, and the engineer must endeavor to use as few as possible with a due regard to the cost of the structure that he is designing. Modern practice has exhibited much fewer and thinner piers than were used by the ancient builders. With them the semicircular arch, with piers almost as wide as the openings, contracting the water-way nearly one-half, was frequently used, while now the spans are increased and consequently the number of intermediate supports diminished, while the piers themselves are made as thin as they can safely be, to support the superincumbent weight of the structure. Where the current is swift the piers should be in its direction as nearly as possible, since any obliquity to the current will give rise to violent eddies, which serve still further practically to contract the water-way, as in the case of the Rock Island bridge, on the upper Mississippi, at which the navigation, especially for rafts, is made exceedingly dangerous by such an arrangement of the piers.

Many experiments have been made upon the proper form to be given to piers in order that they may obstruct the passage of the water as little as possible, resulting in the fact that the same form which enables a vessel to move easily through the water, permits the water to flow past a fixed pier with the least commotion.

When the number and size of the piers are decided upon, the bottom of the river must be examined with a view to their foundations. Many ways of providing a firm base on which to rest the masonry have been adopted, the simplest being to remove by a dredge the soft mud which generally lies on the bottom and then to drop rough stone on the proper point until the pile appears above the surface, when the masons can commence their work. This method suffices where labor is dear and stone plenty, and where the contraction of

the water-way by such masses is not of importance. Another plan is to make strong timber cribs and to sink them, filled with stone, to the bottom, permitting them to reach just to the surface of the water, a method largely adopted in this country with good results.

The neatest, though much most expensive way, is to build a watertight wall or *coffer-dam* around the place of the pier, and after pumping out the water so as to lay bare the bed of the stream, to build up the foundations to the surface with concrete or with regular masonry. The coffer-dam is usually made by driving two rows of piles, one outside of the other, around the space to be laid dry, and then by packing clay in between them so as to render the enclosure impervious to water. Pure clay is not as good for the packing as that which has a slight admixture of fine gravel or sand. When the stream is deep it will be very difficult to prevent the water from soaking through the clay puddling, and a steam pump is often required to keep the space free from leaks and breaks which greatly delay the work and add to its cost; but it is quite practicable, with proper precautions, to lay foundations in this way in very deep and rapid rivers.

We have so far supposed that the natural bottom is suited to bear the weight of the structure, but frequently we find soil of such a nature as not to be able to do so, especially if the pier is thin, and therefore presents only a small bottom surface; in such cases it will be necessary to provide some means of solidifying the bottom, or of distributing the weight over a surface sufficiently large to prevent its sinking. Where the bottom is nearly firm enough, a platform of wood, somewhat larger than the pier, carefully laid, will be sufficient to prevent any sinking. Such a platform will last under water for centuries, many having been found in a good state of preservation under old Roman bridges.

In place of a wooden platform a bed of concrete or beton may be employed, composed of a mixture of mortar made, if necessary, of hydraulic lime and gravel or broken stones, with some sharp sand, which is thrown into the space excavated to receive it, rammed and levelled, and allowed to harden into a solid mass, upon which the masonry is built. Concrete should not, as a general thing, be exposed directly to the action of running water, since it may be rapidly worn away, but with the proper precautions it forms the best of foundations.

Should the soil of a particular locality not prove sufficiently strong for this, however, recourse must be had to *piling*; that is, to driving posts or piles of timber to such a depth that they will not settle any further, and laying a platform upon their heads on which the masonry will rest. The piles, with the bark stripped off, the points sharpened or shod with iron, and the heads defended by iron rings, which are afterwards removed, are driven by a heavy weight falling upon them until they will go no further, or rather only a fraction of an inch with several strokes. They are placed in rows, at distances apart depending upon the nature of the ground, and then their tops being sawed

off to a level, heavy timbers are bolted to them to receive the platform.

Whenever there is any doubt of the foundations, piling will be found to insure the greatest safety and permanence, although it is frequently costly; it is only interfered with by natural springs in the ground which loosen the material around the piles and cause them to settle or to rise. Piles may also be used to advantage to prevent the spreading out of a loose, yielding material, such as quicksand. For this purpose piles sawed out square, so that they will fit tightly together, are driven around the material to be enclosed, touching each other, and connected at the top by string-pieces; the soft material thus confined will present a good bearing mass, after being covered with a wooden platform.

Solid rock is generally the most certain and satisfactory foundation, but the labor of preparing its surface under water to receive the first courses is considerable; hard, gravelly clay and cemented sands are nearly as good; sand, which makes the best of foundations on the land, must be narrowly watched under water, since it is easily moved by currents by the obstruction in the channel, which may wash it away and undermine the structure.

The abutments or land supports of the bridge may, of course, be founded in the same manner as the piers; but being mainly on dry land the difficulties attending them will usually be less.

Piers have been sometimes founded in a stream by building them on the bottoms of flat scows or caissons and permitting them gradually to sink, as the weight of masonry is increased, until the whole mass rested upon the bottom, which has been dredged level to receive it; the sides being detached, the bottom is left under the pier as a platform.

Cast-iron piles, terminating in an auger-shaped flange, which enables them to be screwed into the soil, invented by an Englishman named Mitchell, have been extensively used with good results, especially in the foundation of light-houses and beacons along the coral reefs of the Florida coast. They are easily screwed down in places where ordinary piles are difficult to manage, and their resistance to a vertical pressure is enormous, owing to the surface exposed by the wings of the screw.

Within a few years since the general introduction of iron into engineering practice, a system of foundations by means of cast or wrought-iron cylinders sunk into the bottom of the river has come into favor. These cylinders or pneumatic piles, as they are called, were first proposed and used by M. Triger, an engineer of the north of France, for sinking a shaft through a quicksand; and are known in England as Pott's pneumatic pile, although he is really not the inventor. The cylinders, from six to ten feet in diameter, prepared in the proper lengths, are bolted together and sunk vertically until the lower edge rests on the earth; the top is then closed by a plate, to which is fitted an air-lock or chamber furnished with double doors, like the vestibule of a house, so that a person can enter the lock and

shut one door behind him before opening the other, which leads into the interior of the cylinder.

All being made tight, air is pumped into the cylinder by an engine, and the water forced downwards in the pile until it is all driven out at the bottom; workmen then enter through the air-lock, which only permits a small portion of the enclosed compressed air to escape as the doors are opened, and descending to the bottom excavate the soil under the edge of the pile and in the centre allowing it to sink down gradually by its own weight. It is directed in a vertical position by guides above. As the pile sinks, new cylinders are added to the top, when necessary, and after the whole is down to a firm foundation the interior is filled up with rough stone or concrete, the air-lock removed, a permanent cap substituted, and the superstructure raised upon it.

In loose, sandy bottoms these piles have been sunk by permitting the air to rush out under the edge of the pile and by carrying out with it the sand so as to make an annular channel into which the pile settles by its own weight.

Many bridges in England and on the continent, and some in this country, have been built in this way with great success. One of the most interesting examples is that of the new bridge over the Rhine at Kehl, near Strasburg, where caisson piles were sunk to a depth of sixty feet below the surface of the water.

Frequently the bed of the river, between masonry piers and for a short distance above and below them, is paved, planked, or covered with loose stone, to prevent the current from undermining the structure.

The foundations having been completed, and the piers having been built up to a certain level, the bottom of the beam of a truss bridge and the spring of the arch of a stone bridge, preparations must be made for adding the superstructure.

The truss or beam may be either made on the shore and floated and raised bodily into its position, as in the case of the water tubes of the Britannia bridge, or it may be built in its place upon a scaffolding or false work erected to support it, as in the case of the land tubes of the same bridge and of most of the truss bridges built in this country.

For a stone or cast-iron arch a frame called a centring must be employed, as shown in Figure 60, the top of which has the form of the

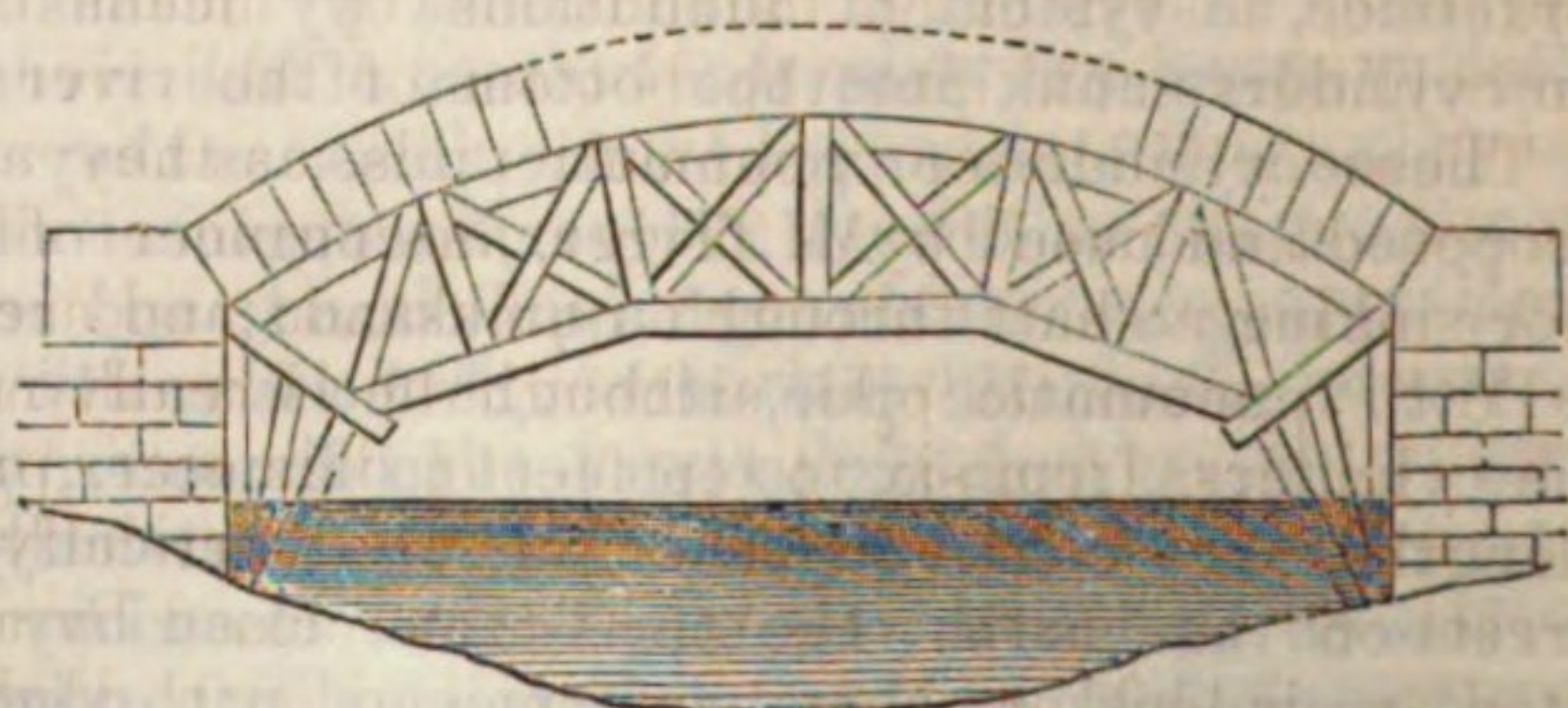


Fig. 60.

inner side of the arch, so that when the stones are laid upon it they

come into their proper places in the curve. If the stream can be occupied during the construction of the bridge by piles driven across it, the form of the centring will be simple enough, for it can be supported along its whole length from below ; but if the water-way, as is frequently the case, must be left clear all the time, considerable ingenuity is sometimes required in designing a structure which, only supported at its ends, shall sustain the varying loads during the progress of the work without change of form.

After the centring is up, the construction of the arch is commenced by laying the first stones near the abutments on both sides, and gradually building up towards the centre ; and as the weight is in this way increased from the ends of the frame towards its middle, the centring must be so trussed as to resist the change of figure which this operation has a tendency to produce.

After the arch-stones, which are cut previously of the proper size and shape, depending upon the curve of the intrados, are all properly laid up to the middle, the last stone, usually called the keystone, is fitted tightly into its place at the crown of the arch, and after permitting the structure to rest for a short time, the centering is slightly lowered to permit the stones to commence to bear tightly upon each other. To enable the centre to be thus lowered, or *struck*, as it is termed, it is made at first to rest on wedges on the lower part of the frame, and these wedges being slowly driven back the centre gradually sinks.

In the bridges of the Alma, the Invalids, and of St. Michael's, all in Paris, an arrangement, invented by M. Beaudemoulin, was substituted for the wedges with success. Upon the fixed portion of the frame a series of sheet-iron cylinders filled with fine dry sand, rested, into which fitted wooden plungers which rested on the sand, and upon these plungers rested the centring. When the centre was to be struck, a small hole left at the bottom of the cylinder was opened, and the sand running slowly out permitted the upper works to settle down gradually.

When the engineer considers the mortar sufficiently set, the centre is lowered still further and taken away, leaving the arch to support itself ; the rest of the masonry work is then carried up, the spandrels filled in to the level with the crown of the arch, and the pavement, sidewalks, and parapet walls added.

Great care must be taken that the rain-water which falls upon the surface of the bridge is not allowed to percolate through the structure ; as it not only carries portions of the lime with it and disfigures the surface and the under side of the arches, but is frozen in winter, and thus tends rapidly to destroy the bridge. Gutters must be laid on the top, and the water from them conducted away in pipes through the piers, while the use of asphalte or bitumen as a water-tight covering to the backs of the arches, is highly to be recommended.

As a general rule, it seems well to avoid much architectural ornament on a stone bridge, unless it has some obvious connexion with the constructive features. Many of the European bridges are in-

jured in appearance by pediments, cornices, columns, and pilasters, which are entirely out of place.

There are enough projections and other features which occur naturally in the construction to give the necessary relief, and structures depending upon these alone have always a neater, bolder character than those which are encumbered and enfeebled by useless ornaments.

In the United States but few, if any, very large stone bridges have been built, and we must look to Europe for examples. The ancient aqueducts, the characteristics of which are usually very high, thin piers and small arches, are among the most beautiful of the remains of Roman enterprise and magnificence, while the river bridges of the same people, however good of their class, are surpassed by those constructed in the sixteenth century and later, when larger spans, lighter piers, and segmental and elliptical arches were introduced by Ammanati, Perronet, and others.

The ellipse or more properly the curve of several centres, Figure 59, presents several advantages over the circular curves. Apart from the increased water-way, its form is much more pleasing to the eye, not only in its own variety, but because in it the broken line which occurs where a segmental arch joins the face of the pier or the abutment is avoided, and because the flatness of the arch near the top gives an appearance of lightness which cannot be got in any other way. The bridge of the Trinità over the River Arno, Florence, Italy, built by Ammanati, in 1566, is the most graceful structure of its kind that has yet been produced, and it owes its beauty principally to the use of this curve. The piers of this bridge are, however, thicker than they should be, since practice has reduced these parts very much in later structures, with advantage both as to appearance and to the water-way left beneath them.

At the present time, when many large bridges are built in isolated places for railway purposes, cheapness and quickness of construction are matters of the first importance, and as these necessities have led to the general use of wood and iron, we shall finish this subject by a description and comparison of two of the most important works of late date. When the Chester and Holyhead railroad was to be carried across the Menai straits, which separate the island of Anglesea from the main land of Wales, a suspension bridge something like a famous carriage bridge built by Telford at the same point, was proposed, but the opinion of the distinguished engineer, Robert Stephenson, supported by nearly the whole of the English profession, was, that it was impossible so to overcome the flexibility of a suspension bridge as to fit it for railway traffic, and the idea was accordingly abandoned. Several plans were then proposed—among them that of a cast-iron arch—but owing to the restrictions placed on the work by the admiralty, some arrangement was required which would avoid interference for any length of time with the free passage of vessels through the strait, and nothing like centring could be used.

Mr. Stephenson first determined to have a wrought-iron truss with strong top and bottom, and thin plate sides or web supported by chains at the central point; the chains, however, were afterwards

abandoned and the simple beam decided upon. The bridge is composed of four spans, the two centre ones being 460 feet and those at the ends 230 feet. The land beams, or tubes as they are called, were built in their places on scaffolds raised from the ground; but the tubes occupying the centre spans were built on platforms on the shore, afterwards floated into position, and raised by hydraulic presses to their places, one hundred and four feet above the level of the water.

It is difficult, without a detailed description, to give an idea of the magnitude and interest of this operation; but when we know that each beam weighed 1,589 tons, was 470 feet in length, and had to be floated during a single tide, from its original place on the shore, several hundred yards to the foot of the piers, brought nicely into a niche in the masonry while still on the floating pontoons which supported it, and then hoisted steadily through a vertical height of 104 feet, we can readily imagine that the work required the greatest care and the most perfect arrangements. There being two large spans to the bridge and two beams to each span, for the double track, there were four to be thus moved, and the successive operations were watched with great interest by the large crowds that assembled to witness them.

These operations, as well as the magnitude of the work, gave this bridge a place in the public mind, and a world-wide importance that perhaps it hardly merits in an engineering point of view.

The two large spans are 460 feet in the clear—the small ones 230. The total length of the bridge is 1,511 feet, and the single line weighs 3.1 tons per lineal foot. "The two tubes, in their entire length and their complete state, contain 9,360 tons of wrought iron, 1,015 tons of cast iron, and 165 tons of permanent way. They are composed of about 186,000 separate pieces of iron, pierced by seven millions of holes, and united by upwards of two millions of rivets. They contain 435,700 feet or eighty-three miles of angle-iron, and their total weight is 10,540 tons." The total cost of the bridge was about three millions of dollars.

Elaborate preliminary experiments, costing over twenty-five thousand dollars, were made to determine the proportions of the beams, by Mr. Fairbairn, to whom much of the credit is due.

The history of this bridge and its construction, in two beautiful volumes, with elaborate plates, by Edwin Clark, will always be considered a classical work both by the practical engineer and the student of science.

The other structure to which I referred is the celebrated bridge built over the Niagara river for the railroad passing through New York and Canada, by John A. Roebling, C. E. The difficulties here to be overcome were the crossing of a chasm 800 feet wide and 245 feet deep, at the bottom of which was a deep river with a furious current, in which no boat could live or no scaffolding could be fixed; of course no central piers could be used, and a single clear span was required.

A carriage-bridge had been constructed at this point, which is

about a mile and a half below the falls, by Charles Ellet,* in 1848, and in 1852, it having been decided to carry the railroad across the river, the large bridge was commenced at the same locality, by Mr. Roebling. The fact that the English engineers had decided that suspension bridges were impracticable for railroad purposes, made the proposition to construct one at this place a bold enterprise, and great praise is due not only to the genius and skill of the engineer, but also to the president and directors of the road to whose liberal views the engineering profession is indebted for this grand experiment.

Suspension bridges for ordinary traffic were in common use in Europe and in this country, and the well-known one at Fribourg, with a span of 807 feet and an elevation of 167 feet above the water, built in 1830, had remained in good condition after more than twenty years of use; but the doubt existed whether such a structure could be made stiff enough to resist the undulations caused by a moving weight as heavy as that of a locomotive and a loaded train of cars.

The cables of the Niagara bridge are four in number, each ten inches in diameter, and made up of 3,640 iron wires of No. 9 gauge, anchored firmly into the solid rock about 230 feet from the edge of the cliff, and passing over massive stone towers 76 feet in height, and from these the roadway is suspended by wire ropes. Iron drawn into the form of wire is known to have its strength greatly increased in proportion to its weight, and, therefore, it can be much more economically employed than in the form of rods or chains.

Were the roadway merely made strong enough to support the load to be brought upon it, the bridge would be depressed, owing to the flexibility of the cables at the point occupied by the load, and would rise at other points, inducing an oscillation that would soon be destructive to the bridge, and the roadway is therefore trussed or framed after the manner of a timber bridge, so as to resist any local depression and to distribute the weight over a great length of the cable, and thus prevent such oscillation.

In addition to that, a number of wire stays run from the top of the tower to points in the truss, on the principle shown in figure 19, which fix those points and thus add materially to the stiffness. Again, the track itself rests upon longitudinal girders of great strength, which serve to distribute the immediate load to more distant parts of the truss. These are briefly the points upon which the stiffness of the bridge depends. The railroad is placed on the upper floor of the truss, while the lower is used for carriages and foot passengers.

It was held by English engineers that a truss which would give sufficient stiffness to the cables would be strong enough to sustain itself and the load, or that the cables would be useless, but this is plainly disproved both by calculation and by the practical result of the Niagara bridge, in which the truss is exceedingly light, and when it serves only the legitimate purpose of stiffening, while the weight

* While these pages are going through the press our country is called upon to mourn the untimely death of this eminent engineer, who, with generous patriotism, devoted his talents and his life to the defence of the Union.

is borne by the cables themselves. The bridge has now been in constant use, and since the eighth of March, 1855, when the first engine passed over it, with perfect success.

It is the duty of the engineer to construct his works so that, while durability is insured, the object shall be attained at the least cost. It has been frequently said that there is no limit to engineering achievements but the want of money, and much less credit is due to him who accomplishes an important result with a large expenditure than to him who does the same with limited means. This is especially true of the public works of this country, where the lines of communication are very long and frequently pass through sparsely settled regions, which could not by their local traffic support expensive structures. It will be interesting, therefore, to compare the cost and weight of the two structures which we have described with the view of determining their relative merits on these grounds.

The Britannia bridge is 1,511 feet in length, the Niagara 800. The weight of one line of the first is 4,680 tons or 2,340 tons for 755 feet against 1,000 tons for the 800 feet of the second, or nearly twice as much. Again, the Britannia bridge, completed, cost three millions of dollars for a double track, while the Niagara bridge cost four hundred thousand for a single track—rather more than half the length; and taking into consideration that the piers, foundations, &c., would cost almost as much for a single line as for two, the ratio of cost would be about one to two and a half, a vast difference in favor of the suspension bridge.

The proof of the practicability of cheap bridges of great spans, due to Mr. Roebling's talents, forms a new era in the art of engineering. Communications which were hitherto considered impossible may now be made; regions like those of the west coast of the United States, intersected by deep ravines with vertical sides, may be traversed by railroads, and rivers may now be spanned by bridges at places which were before entirely impassable.

Mr. Peter W. Barlow, C. E., of England, after a careful personal examination of the Niagara bridge, has not hesitated to propose a plan for spanning the river Mersey, at Liverpool, by a suspension bridge three thousand feet long, at a height of one hundred and fifty feet above the water, with towers four hundred and fifty feet high, at a cost of five millions of dollars.

The greatest engineer is not, however, he who builds the largest work at a greatest cost, but he who, by the introduction of new principles, or by the ingenious application of those already understood, extends the practice so as to enable us to surmount new difficulties with economy and safety.

LECTURE
ON
THE RELATIONS OF TIME AND SPACE.

By PROFESSOR S. ALEXANDER,
OF THE COLLEGE OF NEW JERSEY.

MANY of the truths with which we are conversant have not so much to do with things as with the relation of things. There are no such things, in themselves considered, as 3, 4, 7, or $2\frac{1}{2}$; and even length, breadth, thickness, and capacity are not things in themselves considered, although they belong to all material substances. As with us, so far as we have to do with them, time and space are not things, but the relation of beings and things. We occupy space, and pass our lives in time. There was, therefore, force as well as truth in the observation of Franklin: "Dost thou love life, then do not squander time, for time is the stuff that life is made of." We avail ourselves of this pithy saying of his Poor Richard in order that we may vindicate the necessity for our going a little further and ascertaining the material of which time itself is constituted. This, in the largest sense of the term, is duration. Now, without attempting to define either space or duration, we may readily describe both. Thus it will be conceded that space is that wherein there is room for the whole material creation, so that bodies in it may exist apart. And so, in a somewhat metaphorical sense, duration is that wherein there is room for events to occur; it is that wherein, in one sense, things may happen, or in which it is essential to space that its portions should be diverse in position. All experience tells us that our right hand cannot occupy the same place with our left, and the accurate experiments of natural philosophy abundantly confirm this conclusion. Not only so, but also when my right hand goes to the place where my left hand was, it forsakes its place, leaves behind that part of space it occupied, and goes to another part of space, so that it is essential to space that the portions of it should be diverse in position. It is just as essential to duration, in so far as we have to do with it, that its portions should exist in succession. Tuesday cannot, by any device, become Wednesday; it has preceded that day. Thursday cannot, in like manner, become Wednesday; it must succeed it. It is essential to space, therefore, that its portions should be diverse, and essential to duration that its portions should exist in succession. It is, moreover, a result of all

experience that within the same portion of duration, as far as can be discerned, there is room for the same or similar events to occur in the same way. It is the result also of all experience, so far as we can trace the matter, that one portion of duration is like another, so that no portion of it goes on faster than any other. Now, it is the uniform continuous flow of duration, thus parcelled out, that constitutes absolute time. Relative time is a portion of duration whose limits are marked by events. You have something to mark when that duration begins and when it ends. Absolute time will flow on whether you mark it or not. When that portion of time is marked by events, so that you know where certain periods of time begin and end, it becomes relative time. As then we must speak of the limit when a portion begins, not when it ends, it is desirable that we should distinctly indicate what we mean by limit, whether of space or duration.

Now with regard to the limit of anything that occupies space. The outside of this table before me is no part of the table; it is only precisely where the table ends that outer space begins. The outside is not *somewhat* in the same sense with the table itself, but only *somewhere*—where the table ends, and the outer space begins. But this is still *somewhat* in its own sense. It has breadth, it has length and superficial extent, such as may be measured by a square foot. But the outer edge is not somewhat even in the sense that it covers something; it merely penetrates space, instead of dividing it. The very end of the outer edge is not somewhat even in the sense of a line, for although the outer edge was long, penetrating space, the very end of it is only *somewhere*. Thus it is with the centre of a sphere. It is not somewhat. When we depart from it at all we forsake the central position we occupied. But you may ask is it not somewhere? Oh, yes; precisely at the middle; at the same distance from the surface on all sides. So also with the midnight, with which Tuesday shall end and Wednesday begin. It is not somewhat in duration. It does not last at all. When midnight arrives, that instant the following day will be here. It is not *somewhat* in duration, but only *somewhere*; it is at the precise time when one day ends and another begins that, if I may be permitted to coin a word for the occasion, it is *somewhen*. It lasts not at all, and therefore is only a point of time, that is an instant. There is a distinction between an instant and a moment, for a moment is a real portion of duration—a small but indefinite portion—while an instant is no portion of duration whatever.

The natural measure of time, Lord Kames tells us, is the succession of our thoughts. When the varied incidents of a pleasant journey pass before the mind in review, the interval thus spent appears to have been a long one. But if during a tedious journey, or a fit of the toothache, or, to come still nearer home, a dull lecture, we find time to be long, it will certainly not be long in review. So, then, time may appear long or short, according to circumstances, and it is perfectly evident that this rule of Lord Kames cannot answer as a good measure of time. It has been also supposed that the insects which

live but for a day—the ephemera—may have so many sensations (we cannot call them ideas) during the course of that day that this period may appear on the whole as a long life. Such a measurement of time, varying according to circumstances, is inappropriate; it is evident, therefore, that some other must be sought.

In a good standard of measure of time there are two or three properties which are indispensable. And first, it should be readily accessible: a measure shut up so that it could not be reached would be good for nothing. Second, it should be convenient, both as to size and mode of application. Third, the measure should, if possible, be invariable. Now, there is a standard in nature which embraces these three properties, and that is, the rotation of the earth about its axis.

It is for some purposes convenient, as regards size and mode of application, inasmuch as it is nearly the length of the ordinary day. It possesses the third property, invariability. But how do we know that the rotation of the earth is invariable? This fact may be ascertained by comparing it in the long run, or with something else known to be invariable. To illustrate this, suppose the minute hand of a clock by some means to go too fast; when it arrives at 12 the hour hand will be some way behind the position which it would otherwise have occupied; and this discrepancy, however small at first, if permitted to go on, will become more and more evident. The moon revolves about the earth in a certain number of days, as days now are. Now, if counting ages backward, the day had been changed, the whole number of days, according to our present measurement, would not correspond to the exact number occupied in the moon's revolution, and therefore the position of the moon on a given day, by this backward reckoning, would be found to be untrue. That this is not so is found by a comparison of computation with the observation of an eclipse of the moon more than seven centuries before the Christian era, and from it is safely concluded that the rate of the earth's rotation has not changed one three-hundredth part of a second. There are causes which might change this. The most prominent among these is a change of bulk arising from a loss of heat. The loss of heat does not, in every case, produce a shrinking. Cast iron presents a familiar example, as it at first expands in cooling. It may, therefore, happen that within the earth a great deal of expansion and contraction occurs, though there is no sensible shrinking on the whole. Even if the earth actually shrunk, the loss of heat and size would not diminish the force of rotation at all, but the time of rotation will diminish with the circuit. If I take a ball with a string attached, and, by means of the string, cause it to revolve around my arm, and then wind up the string, as it proceeds in its revolutions the motion of the ball will become quicker and quicker, until the string is entirely wound up.

Let me here observe that the earth has more than one motion. It revolves around its axis, and in that revolution pauses not, while it also moves around the sun. Before proceeding to consider this fact, it is desirable to ascertain when a sphere which has two motions has completed a rotation.

For this purpose, suppose two spheres to be situated as in Figure 1, the one at A, the other at B, having a meridian on the one parallel to a meridian on the other, and that the angular velocity of rotation is the same in both. The audience will perceive that the meridian will continue parallel, and be so found at the end of the rotation. If, instead of this, we suppose that the sphere A, while it revolved, was also transferred to the place of B, then the meridian on A, when it arrives at B, would be found at the completion of its rotation to be parallel to its first position. Noon at any place occurs when the plane of that meridian passes through the sun in the direction of C. If, after one rotation, the earth were transferred to B, then the meridian already shown in the figure must be in a direction parallel to its former position. But noon will not have occurred. To accomplish this the earth must have revolved as much more as the direction of noon has meanwhile changed; that is, until the meridian reaches the line in the figure passing from B to the sun. Now, if the earth's due eastern motion in its orbit were equable, the solar days would be equal, for the excess above a whole rotation (already described) would in every case be the same. This cannot be the case, especially because of two reasons: The first is found in the oblique position of the orbit itself. The earth does not move due east, but eastward, insomuch that if the direction of the circle passing through A, in Figure 2, represent a due eastern direction, the circle through B would represent that in which the earth is actually moving.

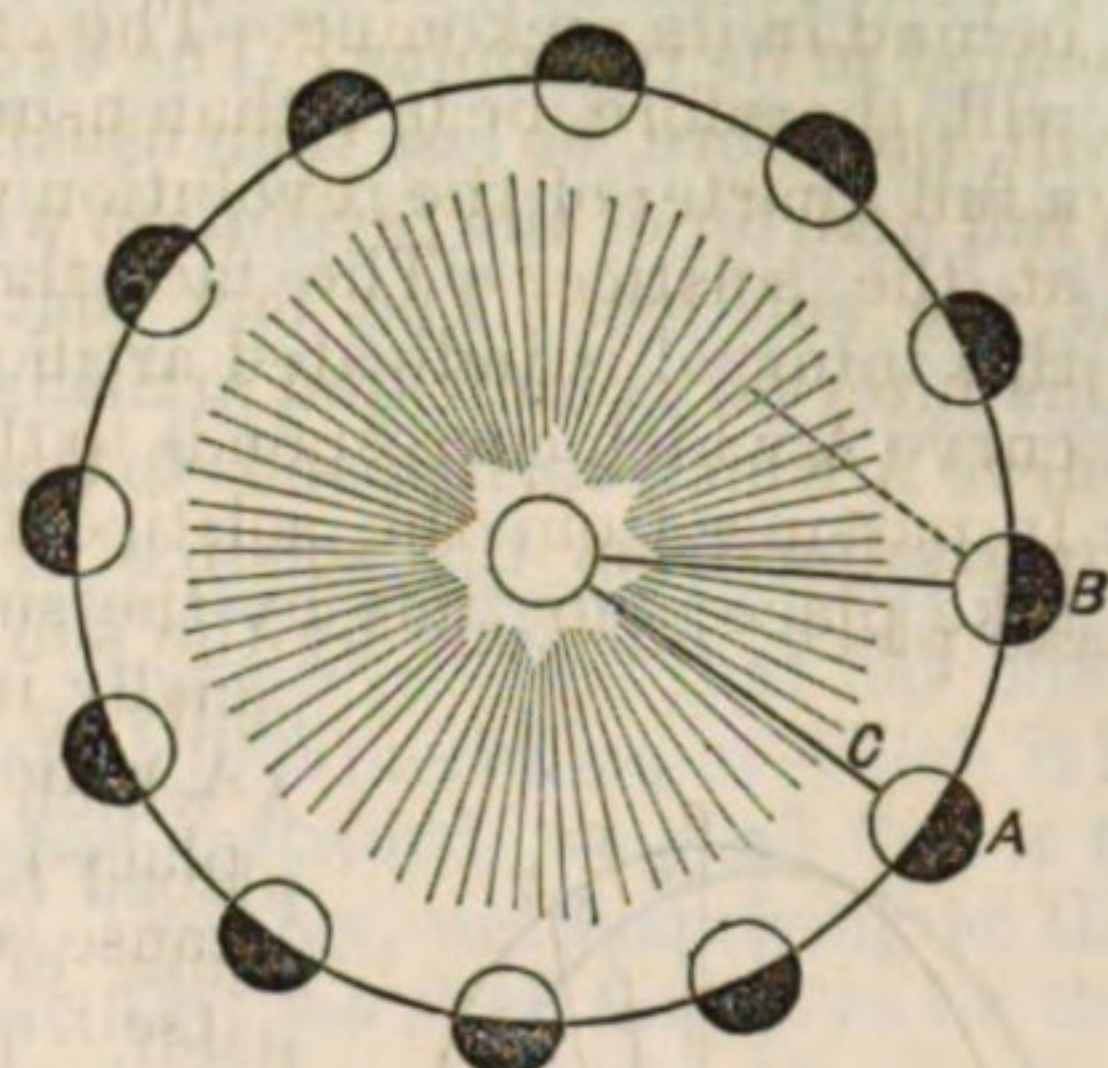


Fig. 1.

It will be perceived on either supposition that a quarter revolution eastward would be accomplished in the same time, or the position as regards a due eastern motion would be the same at four points, these being the equinoctial and solstitial points. This is artificially registered on Figure 5, in which the first curve A is made to intersect the horizontal line at the times of the equinoxes and solstices. Now, in passing from the equinox to the solstice, the due eastern motion, as in Figure 3, E B, is less

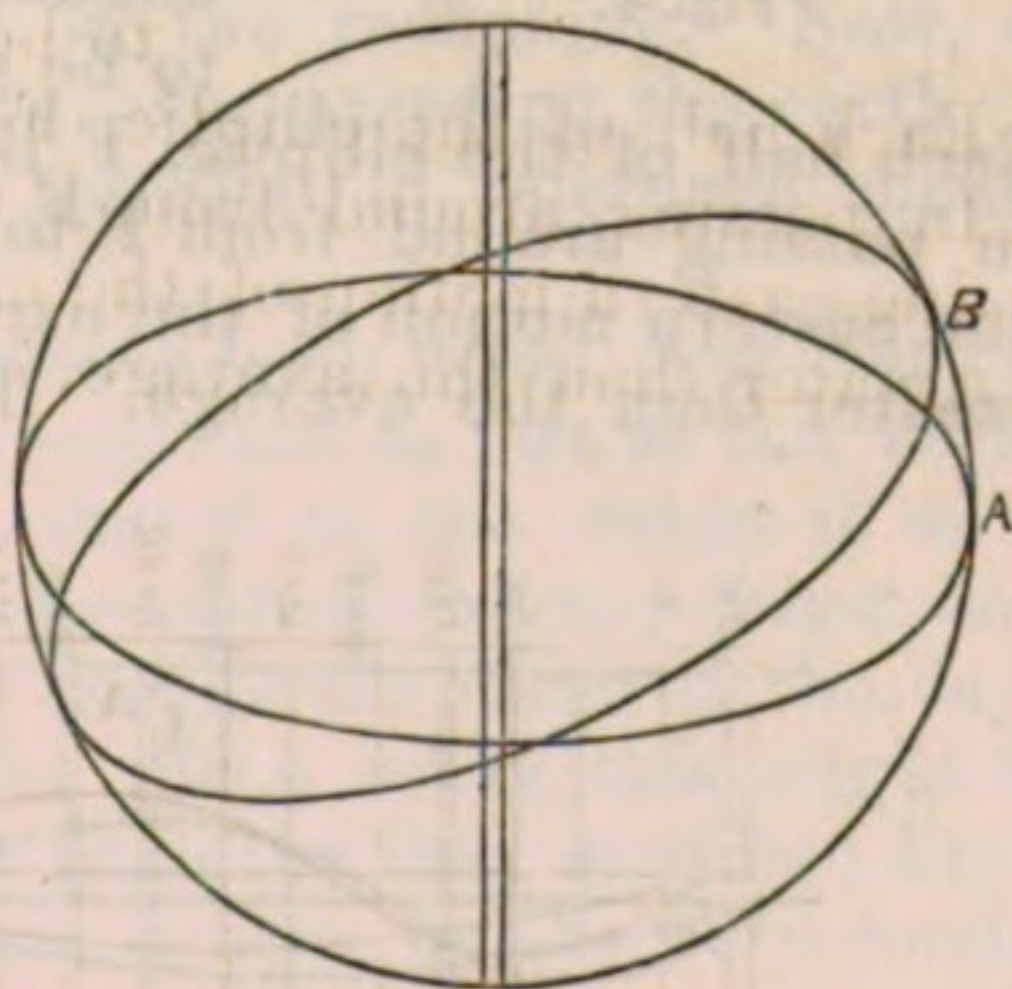


Fig. 2.

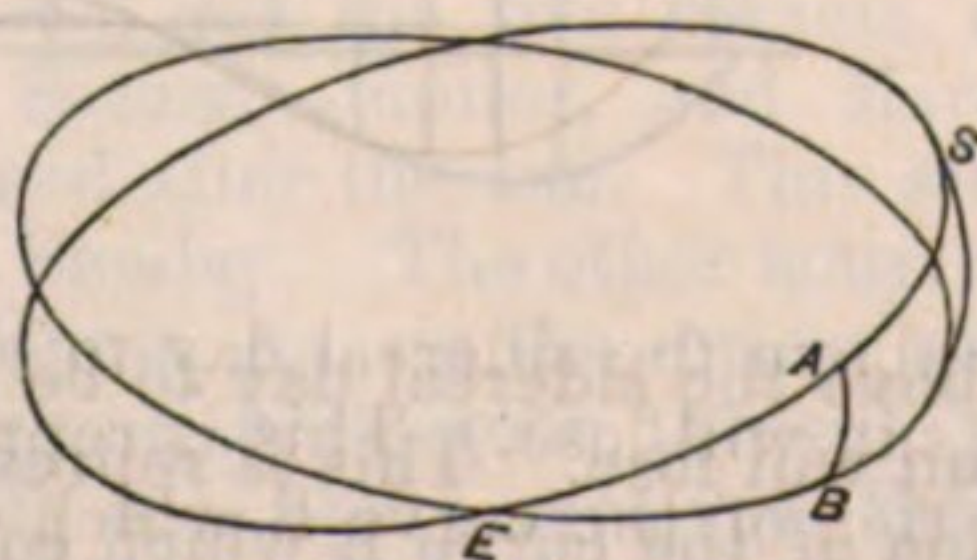


Fig. 3.

than that of E A, the actual motion in the orbit. With reference to its average motion in a due eastern direction, it may be said to lag behind in its reckoning. The excess of the solar above the sidereal day will, therefore, be less than usual. Our time by the sun must gain, and a full quarter of the revolution will still be completed, as before shown, at the solstice. The fact that time by the sun must gain during this interval is indicated artificially in Figure 5 by the portion of the curve A which corresponds to that interval being placed above the line. In passing from the solstice to the equinox the opposite effect will take place; our time by the sun will lose, and this is indicated arti-

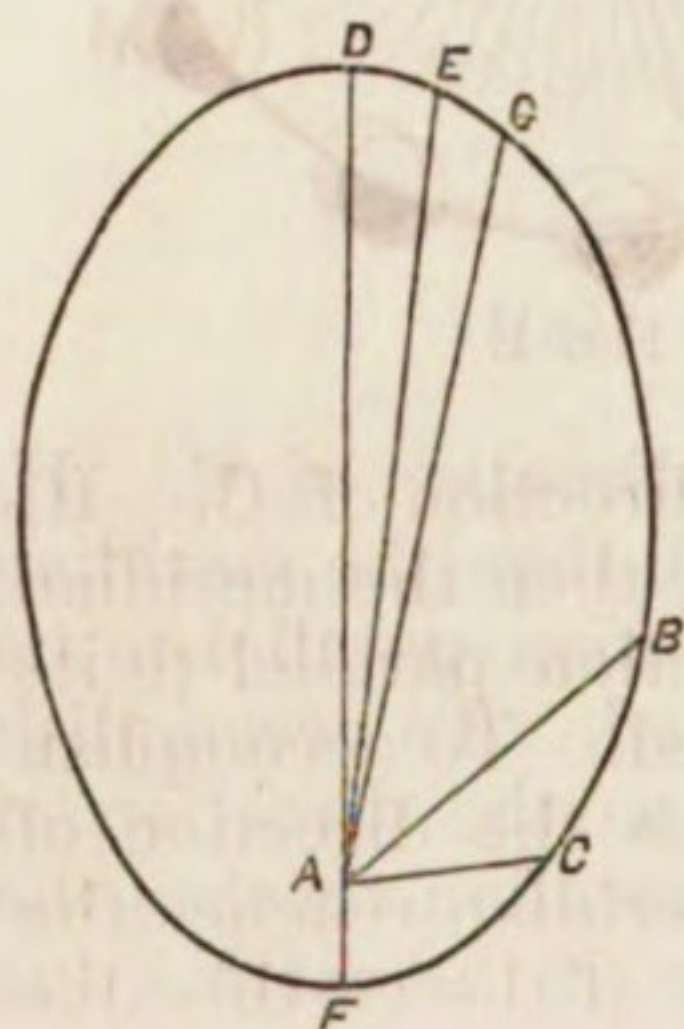


Fig. 4.

cially in Figure 5 by the portion of the curve A which corresponds to that interval being placed below the horizontal line. The other cause of irregularity is found in the orbit itself. This is elliptical. The deviation from the circle is exaggerated in the representation of Figure 4.

The case of motion in the curve requires that the space, such as C A B, passed over in a given time by a line drawn from the sun at A should be equivalent to the space, D A E, passed over in the same time when the earth is passing through any other portion of its orbit. It will be seen that it will require the angular velocity of revolution about the sun to be greater when the earth is nearer to him.

Each half of the elliptic, F B D, will be described in the same time. In passing around from F to D, that is, from January to July, the due eastern motion of the earth will, for the reasons now stated, be greater than the average. This will cause the excess of the solar

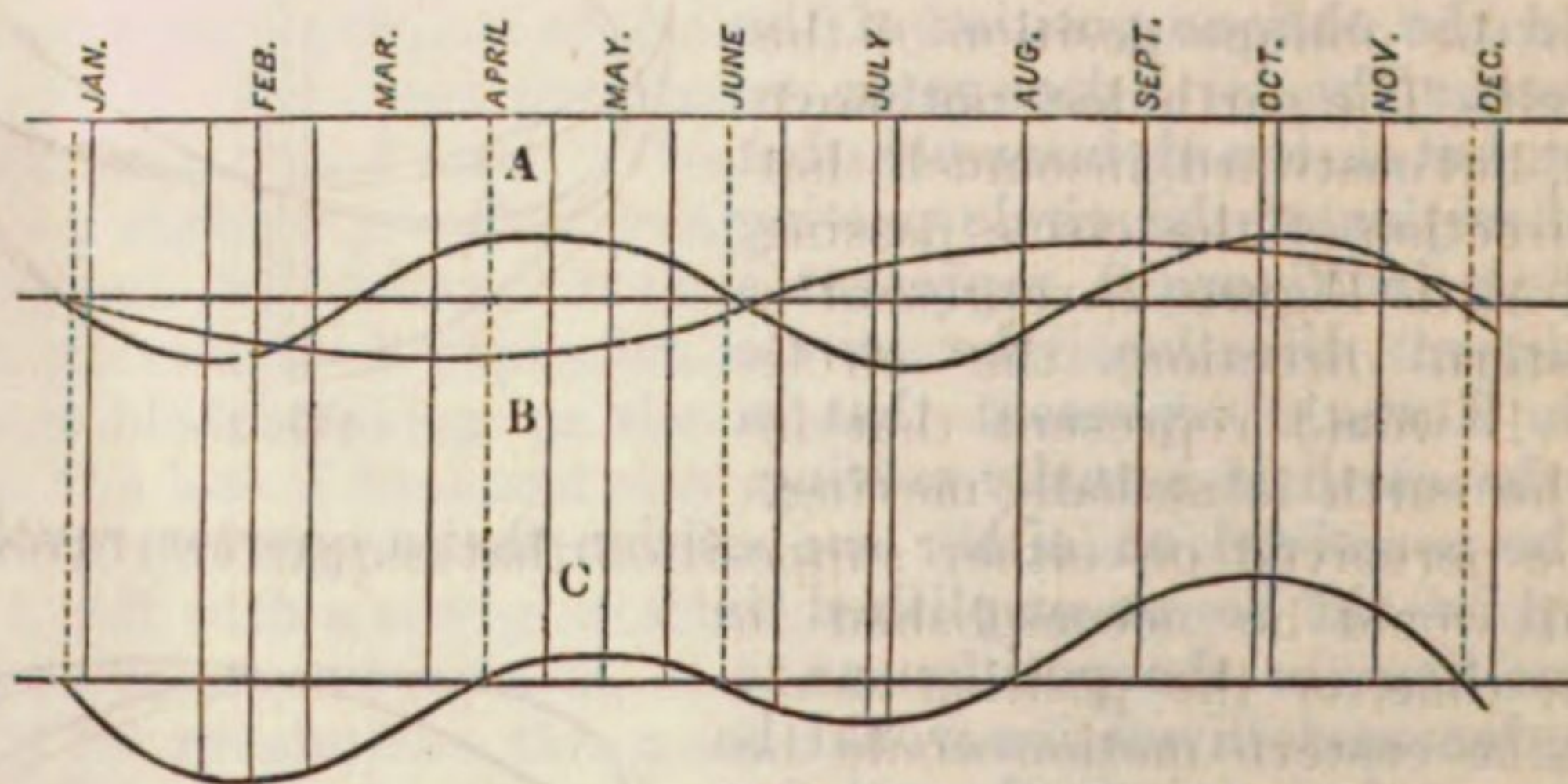


Fig. 5.

above the sidereal day to be greater than usual, and our time by the sun will lose. This is represented artificially in Figure 5 by the portion of the curve B which corresponds to that interval being placed below the horizontal line.

During the other half of the year the opposite effect will take place. This is indicated by the other portion of the same curve

being placed above the horizontal line. The mean solar day is the average of all the solar days in the year, and the deviation from it, arising from both the causes already specified, being proportionably represented at any date in the year on the two curves, A and B, already described, the effect arising from the combination of the two will be represented by curve C, which indicates the equation or correction of time. This will be found to be nothing at irregular intervals, to wit: about the 15th of April, 15th June, 1st September, and 24th December.

It may be well to notice to some extent the difference of local time, as it will enable us readily to answer a curious question that has often been discussed at much length: If from a first meridian, at which it is noon—say of Tuesday—we count around eastward, we shall find it to be later and later in the afternoon of Tuesday, until arriving at the opposite side of the earth, in longitude 180, we shall find it to be the midnight with which Tuesday is about to end and Wednesday begin; but if from the same first meridian we should count around westward, we would find it to be earlier in the morning of Tuesday, until arriving again at the longitude of 180 degrees, we should find the time to be the midnight with which Tuesday is about to begin. By comparing these two results it will be perceived that the difference of time between two places situated beyond 180 degrees—one on the one side and the other on the other—must be all of 24 hours. This difference, which exists about midnight, must continue to exist as time moves on, at any other hour of the day. In passing this limit, therefore, the name of the day of the week must be changed in the reckoning. Now, as Christianity, and with it civilization, are overspreading the earth, it would seem most suitable that the first meridian of reference should be the meridian of Jerusalem.

The question to which allusion has already been made, is as follows: Suppose a traveller to be transferred westward as fast as the earth revolves from sun to sun eastward, so that if at the outset it were noon with him it would continue so, it is required to know when and where it would be necessary for him to change the name of the day. Now, it has already been seen that the place *where* this ought to happen, is in the longitude 180 degrees from the first meridian fixed upon, and the time when this must occur is noon by the very conditions of the problem.

I will now notice the calendar, though I may do it but briefly. It has, of course, for its object the distribution of time, a primary division of which is the day. Anciently the twenty-four hours of the day were named after the sun, the moon, and the five planets, as follows: Sun, Venus, Mercury, Moon, Saturn, Jupiter, and Mars. The first hour of the first day was named after the sun. This also gave name to the day, and it was called Sunday. The other hours of the day were named after the other planets, &c., in the series; and then the series was begun anew, and having been gone through in this way three successive times, twenty-one hours received their names, and the remaining three hours were named by commencing the series a fourth time and proceeding as before. The first hour of

the next day received the name of the fourth in the series, to wit, the moon; and this also gave name to the day, so that it was called Moonday or Monday. Thus the several days of the week were named. The French names of the days of the week still bear marks of this process. In the English names of the days the names of the old Saxon deities are introduced in place of those of the gods of ancient heathenism. Thus we have Sun's-day, Moon's-day Tuisco's-day, Woden's-day, Thor's-day, Friga's-day, and Seterne's-day.

With regard to the months, January is named from Janus; February from Februa; March from Mars; April from the Latin Aprilis, called from aperio, to open, being a spring month of the year; May from Maius; June from Juno; July from Julius Cæsar; August from Augustus Cæsar, and the remaining months from their order in the Roman calendar, September being the 7th, October the 8th, November the 9th, and December the 10th. Our present irregular arrangement is said to have arisen in part from the pride of Augustus Cæsar, who insisted on having as many days in the month named after him as that named after Julius; in consequence of this but twenty-eight days were left for February.

In the next place we come to epochs; an epoch is the period from which any number of years is reckoned. The birth of the Savior is an epoch, and the years reckoned from it constitute a Christian era. According to the Christian era, then, we have arrived at the year 1860. The question whether 1850 ends the first half of the century, or whether it begins the second, is not a question for speculation. It is a mere question as to what is the fact. It is somewhat analogous to the question whether a railroad company had directed the first milestone to be placed at the beginning or end of the first mile, and so onward. At the outset it might be a speculative question as to which position would be the better; but after the arrangement had been made the question would be merely what had been done. Now it is a fact that those who had the arrangement of our chronology so settled the matter that the year one should indicate the first year of Christ; so that the year one did not end until the first year was completed. Hence, the first 100 years did not come to an end until the year 100 was completed. The first 1800 years did not come to an end until the year 1800 was completed; and 1850 years of the Christian era will not have come to an end until the year 1850 shall have been completed. The succession of 100 years constitutes a century, the longest period yet employed in the measure of time, because (observes La Place) "the interval that separates us from the most ancient of known events has as yet required no other." Duration, however, is inexhaustible, and we next proceed to consider the infinites both of space and duration.

Now, whether we regard space forward, backward, sidewise, upward, downward, or obliquely—it matters not in what direction—it is absolutely without limit. Not merely is the limit so remote that you cannot ascertain it, but space is really boundless in all directions, absolutely infinite; so, too, antecedent to all things we still behold, self-sustained upon the throne of His adorable perfections, the great First Cause, He who, being the origin of the first beginning, Himself

has none, but ever was, as now, *from* everlasting. It is in this perpetual precedent, this underived antecedent of the divine pre-existence, that we find the realization of eternity past; so, too, far beyond the ages to come—innumerable though they may be made by the flight of years, immeasurable though they may be by the flight of centuries—must still continue the ceaseless, unalterable being of Him who alone hath immortality underived, and in that is eternity future.

Now it is the combination of both of these, nothing less than this, nothing short of it, that constitutes for us the absolute infinite of duration; that is, from everlasting to everlasting. Dividing the two eternities, as it were, the one from the other, in all worlds at once stands the instantaneous present. Thus it was from the first moment of the existence of the first created being, or thing, and thus it will be when the present system of things, like a worn-out garment, is, as it were, folded up and laid aside. Through the ever-present now, the eternity future flows by, and in the metaphorical sense is transferred, moment by moment, to the eternity past. We recognize this fact even in our ordinary language; thus we say when to-morrow comes [to us] and not when we come to to-morrow.

We are now somewhat prepared to discuss the question whether, if all the material creation were annihilated, what might be called space would remain? On the one hand it would seem that it would not be so, because the outside of this block, for instance, is not somewhat, but only somewhere, and disappears when the block is removed. Hence, we might conclude that what is still more complete outside would disappear if all else were gone. On the other hand, the outside of this block has a dependent existence. It goes with the block, though it cannot exist by itself. Wherever the block goes the outside goes with it. But the block occupies a portion of space and leaves it behind when it is removed to another. Hence, if all else were gone it would seem as if space must still exist. Now the statement that if all the visible creation were removed, there would still be room for another, proves nothing. It but argues that if there were another creation it would exist as now in space. But it does not show what would happen if all these things were gone, or in the absence of everything tangible. This is a matter so far beyond the pale of our experience we can assert nothing with respect to it. We care not, however, whether this question be decided in the one way or the other; but we most uncompromisingly assert that space cannot exist independent of the great First Cause, from whom not merely all things were created, but by whom they also *consist*; who has not merely made these things *what* they are, but *as* they are. On Him are dependent not only all things but all relations of things.

Could space, indeed, exist by itself? It would be a thing by itself and not a relation of things; then must it also be independent, and if it were independent it would be self-existent; if self-existent it would be interwoven with the existence of the Almighty. We know, therefore, of no space which is not pervaded by His presence, as we know of no eternity which He inhabiteth not.

Let us, for a moment, compare and contrast finite with the infinite

and perhaps a simple illustration, contained in Figure 6, will serve the purpose.

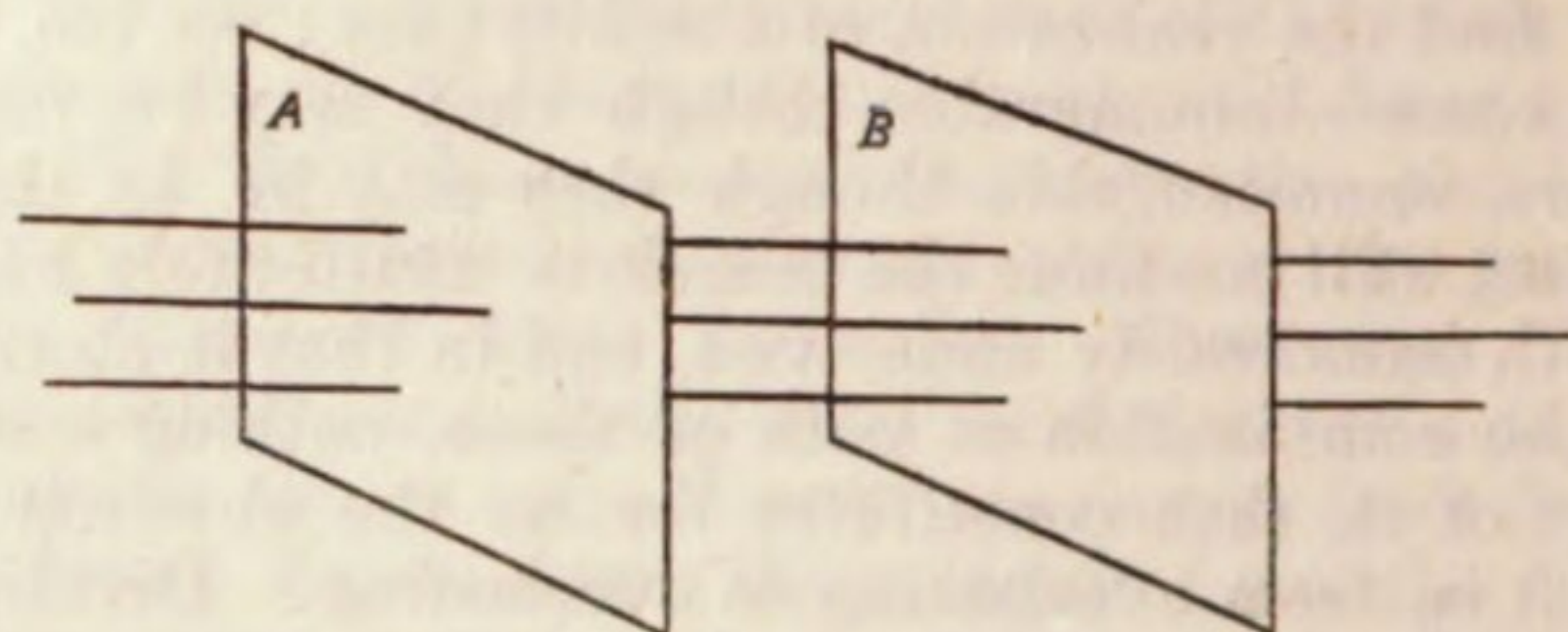


Fig. 6.

If a point (A) be assumed in a straight line which we may term specifically infinite, the line in either direction from that point will be interminable ; and the two portions, one on each side of the point, may be regarded as being *in effect* equal. If, again, another point (B) be assumed in the same line, however remote from the former, the two portions, one on each side of it, may be regarded as being in effect equal ; though the whole intervening distance between A and B will have been added to one of the portions into which the line was divided at the first point (A) and subtracted from the other portion. It appears, therefore, that any such distance, however great, must be regarded as nothing in comparison with a straight line interminable in only one direction. As the point assumed in the interminable line in effect divides that line into two halves, so the instantaneous present divides the eternity past from the eternity future. It does so, in so far as can be discerned, in all worlds at once ; as the same plane in the figure cuts all the three straight lines which penetrate it, and which are to be regarded as interminable in both directions from the dividing plane. The present thus divides those two eternities now. Through the limit thus ever-present the current of time passes, in a metaphorical sense ; and moment by moment the eternity future is transferred to the eternity past, and any portion of time however long must be regarded as nothing in comparison with either. We may thus, in some very humble measure, learn how it is that in the view of the *infinite mind* a "thousand years" should be as "one day," and one day as a thousand years.

The relations of things being, as already maintained, constituted relations ; and they being also constituted in some respects alike, as appears from the comparisons of time and space, we may even reverentially proceed a step further and conclude, that as any finite, or even in some respects boundless, space is worthless, or to be regarded as of no value in comparison with the absolute infinite of space ; and as, again, any finite portion of duration is also a relative zero in comparison with the absolute infinite of duration ; so, also, must the highest created intelligence and lowest among men be alike worthless, or regarded as nothing in comparison with the *alone infinite one*.

Here, therefore, with humble reverence would we rest ; for this discussion has led us to the consideration of great and awful themes ; but here, also, with heartfelt gratitude would we bow, since He has revealed Himself, and how He may be to us the Father of Mercies.

LECTURE
ON
ARCTIC EXPLORATIONS.

BY DR. I. I. HAYES,
COMMANDER OF THE LATE AMERICAN ARCTIC EXPEDITION.

I APPEAR before you, in obedience to an invitation with which I have been honored by the Secretary of the Smithsonian Institution, to give an account of my late expedition to the Arctic seas. That expedition, some of you may remember, sailed from Boston in July, 1860, and returned to the same port in October, 1861. Before passing to my narrative, a brief statement of the objects of the expedition may not be out of place.

It was my good fortune to have sailed in 1853 with the lamented Dr. Kane, as surgeon of his expedition, and I remained in that service until late in 1855. Upon my return to the United States I formed the plan of another expedition. There were many circumstances of discouragement, not least among which was an impression which then had possession of the public mind, that any further efforts toward the North Pole must be fruitless, and must involve an unjustifiable exposure of life. It was only after many endeavors that here and there the influences favorable to my design began to affect the community. The most important of these was, of course, the sanction given to my plans by those associations by whose opinions the mass of men are governed in relation to scientific matters; and it gives me pleasure that I am to-night enabled, on a public occasion like the present, to express my acknowledgments to the Smithsonian Institution for the liberal support which was rendered by it to the expedition, not only by its contribution of scientific apparatus, but through the encouragement which was given towards effecting its organization by the influence of the distinguished gentleman who is the principal executive officer of the establishment. To this approval of the Smithsonian Institution, so widely known and respected, were added that of the American Philosophical Society, the Geographical Society of New York, the Academy of Natural Sciences of Philadelphia, the American Association for the Advancement of Science, the American Academy of Arts and Sciences, the Boston Society of Natural History, and the assistance and encouragement of individuals, among whom the renowned head of the coast survey, Dr. Bache, was the most conspicuous. Yet, in spite of the efforts made in many quarters, my outfit was a very small one. My original plan embraced two vessels, one a small steamer, and the other a schooner, the latter to be placed in a convenient harbor, near the mouth of Smith strait, and the former to be used for penetrating the ice to the northward; but to obtain so large an organization as this plan involved was found to be impracti-

cable. Upon leaving Boston, July 10, 1860, my entire party numbered only fifteen persons, and we sailed in a schooner of only one hundred and thirty-three tons burden.

My purpose was to follow up the line of research opened by Dr. Kane; I allude, of course, to that of Smith strait and Kennedy channel. You will readily understand that I had no such idle purpose as was sometimes popularly attributed to me, viz: that of merely reaching the north pole of the earth as a feat of adventurous exploration.

The general object was to procure as much information as the restrictions of our voyage would allow beyond the termination of Dr. Kane's labors, and in the same direction in which they tended. The space between the point at which his personal observations ended and the North Pole is about six hundred and fifty miles, an interval sufficiently large to admit of very numerous and important observations.

Coinciding with him in the opinion that at some portion of each year there exists a large body of water about or near the Pole, I hoped to extend the evidence which he had collected on this subject as well as on many others.

It would, of course, have been a source of the highest satisfaction to have succeeded in setting at rest the question of open water, but it was by no means the sole object of the expedition.

Various questions connected with the physical condition of the earth remain to be solved by observations in high latitudes, such as the currents of the air and water; the temperature of these movable elements; the pressure of the former and the tides of the latter; the variation of gravity; the direction and intensity of the magnetic force; the aurora borealis, &c. Relative to all these it was my intention to make observations, and I trust when the results which I have obtained are discussed, as they will be, under the direction of the Smithsonian Institution, they will not disappoint the reasonable expectation I have formed of their value.

I esteemed myself fortunate in obtaining the services of Mr. August Sonntag, the able astronomer and physicist of Dr. Kane's expedition, who early volunteered to fulfil the same duties during my own, and also to aid me as second in command, and upon him were to be devolved the most important of the observations. His death soon after entering our winter harbor left me with the aid only of three young men, who were dependent almost wholly upon my instruction and supervision.

I have made these explanations in order that you may the better appreciate the difficulties which embarrassed us, and that you may not in advance be induced to overrate the unpretending collections made during my cruise; yet it is due to the truth to say also that, notwithstanding these difficulties, the zealous aid of my young associates has enabled me to return with some valuable additions to our previous stores of knowledge.

In order that you may in the outset have a clear idea of the route of the expedition, I will call your attention to the rude diagram suspended on the wall, representing the Arctic regions in circumpolar projection. The centre of the map, therefore, represents the position

of the North Pole, and, as far as known, this point of extreme northness is in the centre of a great ocean, almost mediterranean in its character, for you will observe that the shores of Greenland, America, Asia, and Europe invest it almost completely, while the islands of Nova Zembla and Spitzbergen interrupt the only broad entrance to it from the south.

It has long been supposed by physicists that this large body of water could not be frozen over, that an open sea of varying extent would be found within the ice belt which was known to invest it; and the correctness of this hypothesis seemed to be, at least partially confirmed, by the researches of the old Dutch and English voyagers, and more recently by those of Scoresby, Wrangell, and Parry. To these evidences were added the important discovery of open water by one of Dr. Kane's exploring parties to the northward of Smith strait.

The great difficulty which has been experienced in solving this interesting problem has been an inability either to push through the ice belt with a vessel, or to travel over it with sledges sufficiently far to obtain indisputable proofs.

My experience with Dr. Kane led me to believe that the chances of success were greater by the route which had been pursued by Dr. Kane than any other, and I conceived the idea of carrying a boat over the ice belt to the open water, having previously penetrated as far as practicable with a vessel.

You may remember that Dr. Kane's highest northing with his vessel was latitude $78^{\circ} 37'$ on the eastern side of Smith strait. It seemed to me that the chances of success would be greater if a vessel could be taken up the west coast, and from my own observations in 1854, it appeared probable that a latitude between 79° and 80° could be obtained for a winter harbor. For means of transport across the ice I relied upon dogs.

How far I was able to execute my plans, it will be my purpose to inform you in this lecture.

The schooner in which we sailed was originally built for the West India trade; she was carefully strengthened for the ice encounters by heavy beams and braces internally, and externally by a thick wooden sheathing, and by heavy iron plates over the bows and cut-water. Agreeably to my petition, her name was changed from "Spring Hill" to "United States," by act of Congress.

I will not dwell upon the details of our voyage to Greenland, which was unusually boisterous. The schooner was unavoidably so heavily laden that her deck was never more than eighteen inches above the water, and was never dry. After touching at Pröven and Upernavik, we reached, on the 21st of August, Tessuissak, the most northern of the Danish stations, in latitude $73^{\circ} 40'$. At all of these places we were kindly received, and the officials furnished me with every facility in their power for procuring the requisite furs and dogs for sledge travelling.

A brief description of these settlements may not be out of place in this connexion. You are all, no doubt, aware that Greenland is a possession of Denmark. It is divided into two principal districts or

inspectors, each of which is presided over by a viceroy or royal inspector. These principal districts are known as North and South Greenland, the seat of government of the former being Godhavn, situated on the southern extremity of Disko island; and of the latter at Godhaab. Each of the inspectorates is subdivided into smaller districts, which are under the immediate control of chief traders or governors, who are directly responsible to the royal inspector. The most northern district is that of Upernavik, the seat of government of which is at the settlement or colony of that name, situated on a small island, in latitude $72^{\circ} 40'$. The settlements of Pröven, Tessuissak, and many others of a similar character, are comprised within that district, and are subordinate to the central authority at Upernavik. The outposts comprise generally only a trader's house and a few native tents. Upernavik has besides the government house, a missionary house, a church, and school-house, two storehouses, a shop, two blubber-houses, and about a dozen Esquimaux habitations.

The Greenland colonies are for the most part profitable to the Danish government; and they maintain the government employés and natives in comfort and abundance. The people live exclusively by hunting and fishing; and from the district of Upernavik alone, two vessels, of three hundred tons each, are annually freighted with the products of their industry and hardy skill, consisting of whale, seal, and shark oil; seal, fox, reindeer, and bear skins; eider down, walrus, and narwhal ivory; codfish, and other articles of less value.

My purpose in halting at the several stations which I have mentioned was to obtain furs and dogs for my proposed sledge travelling at the north. Having, through the kindness of the Danish officials, obtained the needed supplies, as also three Esquimaux hunters and an interpreter, we set out from Tessuissak on the 22d of August for the field of our future explorations. Our route lay thence northward through Melville bay, the usual track of the whalers. That bay was entered on the morning of the 23d of August, during a thick snow storm, with a heavy gale and a high sea following us; and without having encountered any ice we reached Cape York in fifty-five hours. This passage of the bay was remarkable.

Standing close in under Cape York, I kept a careful watch from the masthead for Esquimaux, and I soon had the gratification to see a group of them running down toward the beach, making signs to attract attention. The schooner being hove to, I went on shore in a whaleboat, and was met at the beach by an Esquimaux, whom I quickly recognized to be Hans, Dr. Kane's young hunter. Upon his expressing a desire to accompany me, I took him, together with his wife and child, on board, and again stood northward.

Beyond the parallel of the Carey islands, near which the whalers annually pass, and thence to Smith strait, our track was the same as that of Dr. Kane. The distance from the northern limit of the whale fishery to Smith strait, you will perceive, is not great, and with a fair wind we ran it in a few hours. The chief interest of our voyage commences, therefore, on the 26th of August, on which day we were a little to the northward of the position of Baffin in 1616, and Ross

in 1818, twenty miles south of Cape Alexander, the entering cape on the Greenland side of Smith strait.

The strait was entered on the 27th of August; but we were unfortunate in meeting near its mouth an ice-pack of extraordinary thickness, through which no passage could be effected. This pack trended off to the south and west, and appeared to adhere to the western coast. Our efforts to find a navigable lead were interrupted by a heavy gale which broke suddenly upon us and drove us out of the strait. The gale continued with great force for three days, during which we were a second time driven out of the strait, and, having at length sustained serious damage, we made the land and anchored.

At that place I went on shore and, from an elevation of twelve hundred feet, obtained a view to the west and north. The ice was everywhere closely packed and heavy. On the following day we were blown from our anchorage, and were much damaged against some icebergs which had drifted in with the current. It was as late as the 1st of September that we again entered the strait, again to be blown out and crippled by a sudden return of the gale. It was not until the evening of September 2d that we effected a permanent lodgment in the strait. Failing to find an opening toward the west shore, I determined to seek one higher up, near Cape Hatherton; but when among the ice off Littleton island the schooner became "beset," the iron sheathing on the bows and the cutwater were carried away, and the rudder was rendered useless. After some hours we reached a place of safety and anchored. We put to sea again on the 6th, but failing to pass Littleton island, and the temperature having fallen to 12° , when navigation was no longer safe, I was obliged to go into winter quarters in Hartstene bay, ten miles northeast of Cape Alexander, in a harbor which I have named Port Foulke, in honor of my friend William Parker Foulke, esq., of Philadelphia, who was the earliest and has been one of the most constant friends of the expedition. Subsequent observations gave our position, latitude $78^{\circ} 17' 41''$, longitude $72^{\circ} 30' 57''$ W., twenty miles south of the latitude of Rensselaer Harbor, (Dr. Kane's winter quarters,) and distant from it by the coast line about ninety miles.

At the time of going into winter quarters the vessel was badly crippled by frequent collisions with field ice, and by twice being driven upon icebergs. The weather was not only very boisterous from the time of our first entering the strait, but thick snow was almost continually falling. I regretted very much that we had not steam-power.

My plans of exploration being based upon reaching the west coast, and there attaining a harbor above or near latitude 79° , which I had thought practicable from personal observations made in 1854, you will perceive that our winter harbor was very unfavorable for the accomplishment of my purpose. I could not attain even as convenient a position as that of Dr. Kane, whose line of travel, being near the Greenland coast, was freed from some of the obstacles attending our passage across the strait, with dog sledge, to Grinnell Land.

Our preparations for the winter were similar to those of Dr. Kane. A house was built on shore to receive our stores, and the hold of the

vessel was converted into a room for the men. The upper deck was covered with a house made of boards, which had been brought for the purpose. The ship's company lived in health and comfort. During the autumn and winter the officers were engaged in various scientific observations.

Soon after entering our winter harbor an observatory was erected upon shore near the vessel, under the superintendence of Mr. Sonntag. It was a frame structure, covered first with canvas and then with snow, and was eight feet square. In this a fine pendulum apparatus, constructed under Mr. Sonntag's supervision by the Messrs. Bond, of Boston, after the plan of Foster's instrument, was immediately mounted, and satisfactory sets of experiments were then made by Mr. Sonntag, assisted by Mr. Radcliff. The pendulum beat nearly seconds; that is, rudely, 3,607 beats in 3,600 seconds of time. The readings were made when the knife-edge passed the zero point of the graduated arc. The interval of the readings was ten seconds, and eleven readings generally made a set. These observations were continued from September 26 until October 12. They are yet unreduced, and I am therefore unable to announce to what conclusions they lead. I may mention that experiments were made by Mr. Sonntag and Professor Bond at the Cambridge Observatory prior to the sailing of the expedition, and that the instrument will be placed in Professor Bond's hands for a repetition of the experiments at the same place.

Upon removing the pendulum apparatus, a unifilar magnetometer was mounted upon a firm support in the centre of the observatory, and the scale readings were recorded hourly every seventh day, and three times daily during the interval, from November to March. The same instrument was subsequently used for making several sets of experiments in declination, deflection, and vibration. A corresponding number of sets of experiments for the determination of dip were also made with a well-adjusted instrument. These four classes of magnetic observations were, with certain omissions, subsequently repeated at Cape Isabella on the west side of Smith strait, at Netlik in Whale sound, at Upernavik, and at Godhavn. All of these observations are yet unreduced. I should mention that the instruments were furnished to the expedition by Professor Bache, superintendent of the United States Coast Survey, under whose supervision the constants had been carefully determined, and to whom the instruments will be returned for correction.

Near the observatory a suitable shelter was erected for a number of thermometers, which were read hourly every seventh day, and three times daily in the interval. These instruments were carefully compared at every 10° of temperature down to -40° , and these records were referred to a standard which was brought home, and has been placed in the hands of the maker, Mr. Tagliabue, for further comparison. Some of the instruments were manufactured by Mr. Green, of New York, and were furnished by the Smithsonian Institution. The remainder were presented by Mr. Tagliabue. These observations were continued during our stay at Port Foulke, from September, 1860, to July, 1861. I may mention in this connexion that throughout the

cruise a bi-hourly registry of atmospheric temperature was made with a single instrument, mounted on the vessel when at sea, and on a post upon the ice when in winter harbor. A like number of barometer readings was also made and recorded. A careful record of meteorological phenomena, including direction and force of wind and general atmospheric conditions, was kept up during the cruise.

Although there has been no discussion made of these observations, yet there are some manifest general results which may interest you. Our winter was much milder than either of the winters of 1853-'54 and 1854-'55, passed by Dr. Kane at Rensselaer harbor, twenty miles further north. The weather was, unlike that experienced by Dr. Kane, generally stormy. Northeast winds, frequently very strong, prevailed—a fact at least in part accounted for by the open water which was during our stay at Port Foulke constantly visible outside of the harbor, and it was doubtless due to the same fact that we experienced a modification of temperature. March was the coldest month. It was during this month, and while absent at Rensselaer harbor, that I recorded the lowest temperature, -68° F. It is remarkable that on the same day the lowest temperature registered at Port Foulke was only -29° , and on the day previous, when I experienced a temperature of -66.5° near Rensselaer harbor, the temperature at Port Foulke was -27° .

In the autumn I made, in connexion with Mr. Sonntag, a survey of a glacier which approaches the sea through a valley opening from the head of the bay in which we wintered. This had been discovered by Dr. Kane, and by him named "My Brother John's Glacier." Its face is nearly two miles from the sea, which it is gradually approaching. With the view of determining its rate of progress, we ascended to its upper surface and carefully measured a base-line in its axis. From either end of this base-line angles were taken, connecting it with fixed objects upon the mountains on each side. Lateral stations were next established, and these were connected with the base-line, and with the before-mentioned fixed objects. The angles were repeated by me after an interval of eight months, and the result showed a downward movement of the glacier, amounting to ninety-four feet.

In October I performed a journey upon this glacier and the *mer de glace* to the eastward of it, penetrating about fifty miles into the interior. Our angle of ascent was, at first, about six degrees, decreasing gradually to from one to two degrees. The surface was at first somewhat broken and irregular, but as we advanced it became smooth and the ascent regular. Our elevation upon setting out to return was estimated at about 5,000 feet, when we were quite out of sight of land.

The sun was absent from us 130 days, and I attributed the remarkable healthfulness of our party, during that long period of darkness, in a great measure to the abundant supplies of fresh animal food which we were enabled to obtain. The reindeer, the blue and white foxes and hares were quite numerous in the immediate vicinity of Port Foulke, and through the persevering energy of our hunters a

full supply was procured before the winter set in, not only for the ship's company, but for the dogs.

With the winter, however, came serious misfortunes. A disease which has been for several years prevailing throughout all Northern Greenland broke out among the dogs, and by the middle of December all of them had died but eleven. It became then necessary to open communication with the Esquimaux of Whale sound, with the view of obtaining a new supply. It will be remembered that my plans of exploration were based entirely upon the use of dogs as a means of transportation across the ice; and from our unfavorable situation it appeared evident that with our reduced force I had not the means to prosecute my purposes with the success which I had anticipated.

Mr. Sonntag early volunteered to go to the Esquimaux for the purpose before named. His offer was accepted, and he started on the 22d of December with a sledge drawn by nine dogs, and accompanied by Hans, (Dr. Kane's young native hunter,) whom, as before stated, I had found at Cape York. This expedition was attended by an event which cast a gloom over our whole party. Mr. Sonntag lost his life in attempting to cross Whale sound. As reported to me by Hans: In the act of passing a crack which had been recently frozen over, he broke through the thin ice and became thoroughly wetted. He was assisted out of the water by his companion, but before they could reach a place of shelter, five miles distant, Mr. Sonntag was so badly frozen that he was insensible, and he died soon afterwards. The body was subsequently recovered and interred near the observatory at Port Foulke.

Hans continued southward and accomplished one of the purposes of the journey; but, in consequence of bad management and over driving, five of his team were killed, and I was left, upon his return, with only six dogs. The Esquimaux having learned through Hans of our being at Port Foulke, came to us in the spring, and from them I was enabled to obtain a sufficient number of dogs to increase my pack to about twenty; but some of them died afterwards, and I was left, finally, with two teams of seven each. With so reduced a force I became seriously apprehensive for the success of the labors which were to follow.

On the 20th of March I set out on my first journey. The object of this effort was to establish a provision depot for use during the summer, and it was successful. While absent upon this occasion I visited Rensselaer harbor, Dr. Kane's winter quarters. No vestige of the "Advance" could be discovered. She had probably drifted out to sea with the ice, and been subsequently crushed and sunk.

The preparations for the principal journey were completed early in April, and on the 4th of that month I started northward with my entire available force, comprising twelve officers and men, and fourteen dogs. Our equipment consisted of a metallic lifeboat mounted on runners, provisions for seven persons for five months, provisions for six persons and fourteen dogs for six weeks, and the necessary camp fixtures.

The open water which continued throughout the winter, within

sight of Port Foulke, extended northward in April in a narrow stream nearly to the parallel of Rensselaer harbor, and I was obliged therefore to adhere to the eastern shore, instead of pushing over to the north and west, as I had originally intended. In consequence of our forced selection of this route we encountered the same condition of hummocked ice which had embarrassed the exploring parties of Dr. Kane. The centre of the strait was crowded with ridges of broken ice, more extensive than I had ever before seen, and through these, after three weeks' trial, I found it to be impracticable to transport the boat which I had intended for the exploration of the Polar sea, and I, accordingly, with much reluctance, was obliged to send the main party back and to continue northward with two dog sledges and three companions.

The hummocks became worse as we advanced, and, although we were only forty miles, in a direct line, from the west coast of the strait, fourteen days were consumed in reaching it. We were obliged to return several times upon our track for portions of our cargo, and the severity of the labor rapidly reduced the strength of the dogs.

Our track across the strait was nearly the same as that which I had formerly made, upon my return from Grinnell Land in May, 1854, when acting under the orders of Dr. Kane. The unfavorable circumstances under which my surveys were made, during that journey, occasioned some errors upon the chart, which I was glad, on this occasion, to have opportunity to correct. As I neared the coast of Grinnell Land, it became evident that a channel or sound opened westward from Smith strait, separating Grinnell Land from the Ellesmere Land of Captain Inglefield. In the mouth of this sound are two large islands, to the northernmost of which I have given the name of Professor A. Dallas Bache, superintendent of the United States Coast Survey, and to the other that of Professor Joseph Henry, secretary of the Smithsonian Institution, to both of which gentlemen the expedition was greatly indebted for the influence which their names gave to the support of the enterprise, and for the liberal contributions which the former made toward my outfit.

On the 12th of May I entered Kennedy channel, and following the coast as it trended nearly due north, I reached on the 16th the bay which bears the name of the renowned geographer—Carl Ritter. The roughness of the ice and the deep snow had by this time thoroughly disabled one of my companions and a portion of the dogs; and I was obliged, therefore, to continue my journey with one team and a single comrade, Mr. George F. Knorr, a young gentleman who served throughout the expedition with remarkable fidelity and spirit. After the termination of three days' severe struggling through deep snow and heavy hummocks, which were piled upon the land ice, our provisions became exhausted and we were forced to return. We had then reached latitude $81^{\circ} 35'$, forty miles beyond the limit of Dr. Kane's explorations on the opposite side of the channel, and further north than had ever before been attained upon land. To the highest point attained I have given the name of my very kind friend,

Professor Francis Lieber, and a remarkable peak which rose above my last camp I have named in honor of the distinguished American artist, Mr. F. E. Church.

To the northward of Cape Lieber opened a magnificent bay, which I regretted that I was not able to cross. This bay bears the name of Lady Franklin. At its head rose two bold mountain peaks, which I named Sylvia Mount and Mount Cornelius Grinnell.

To the northward were seen Cape Beechy, another high cape beyond it, which I called Cape Frederick VII, after his Majesty the King of Denmark, to whose subjects in Greenland I was indebted for many favors, and, in the far distance, I could trace the faint outlines of a magnificent headland, the most northern known land on the globe. This land I named Cape Union.

Returning upon the same track, we reached the vessel after an absence of fifty-nine days, during which time we had travelled in our various goings and comings about 1,400 miles. During this period we used for our nightly halt the snow hut of the Esquimaux.

The personal equipment of each member of the party weighed only eight pounds. Upon my return to Port Foulke only seven of my dogs remained alive, and these were so much broken that further explorations for the season, with dog sledge, were rendered impracticable.

The physical conditions observed in Kennedy channel are, perhaps, among the most important of my results. It was in that channel, and to the northward of it, as I have before observed, that Morton discovered an open sea late in June, 1854. I did not find open water, but the ice was everywhere much decayed, often being so thin that it would not bear my party; and in some places pools of water were visible. In one of these pools a flock of waterfowl, the *Uria gryllae*, were discovered. My stay in Kennedy channel was from the 12th to the 23d of May, a period of the year six weeks earlier than that at which the observations of Morton had been made; and I entertain no doubt that, could I have returned to the same locality in the latter part of June, I would have found the sea open. Indeed, everything indicated a speedy dissolution of the ice. There were some indications also that the region to the northward is annually open. I will mention one which struck me most prominently. The coast on the west side of Kennedy channel, especially where exposed to the northeast, was lined with a heavy ridge of ice, which had been forced up under the influence of great pressure. Many of the masses were as much as sixty feet in height, and they were lying high and dry upon the beach. The pressure necessary to occasion this result could not possibly be created by ice-fields moving over a narrow channel, and I believe the result to have been produced by ice-fields of great extent coming down under the influence of winds and the current from a vast open area to the northward.

The summer was passed in the conduct of such explorations and surveys as could be made in the immediate vicinity of Port Foulke. The established routine of observations was continued at the vessel, and in addition a delicate tidal apparatus was constructed, the readings of which were made to tenths of a foot, and at intervals of ten

minutes. We were joined by a tribe of Esquimaux, living on the coast between Smith strait and Cape York, and several members of the tribe continued with us until late in the summer. This singular people numbered about eighty souls. They lived in snow-houses about our harbor, and maintained themselves by hunting the walrus and seal.

The schooner, having been prepared for sea, was broken out of the ice on the 10th of July, and we sailed from our winter harbor on the 14th. After much difficulty and two trials, we reached the west coast, ten miles below Cape Isabella. That cape I was unable to pass in the vessel, but I succeeded in making its north side in a whaleboat, and from an elevation of about six hundred feet I obtained a view to the northward. In that direction the ice was everywhere unbroken; and as it did not appear probable that I could obtain for the schooner a more northern harbor, and as I had now only five dogs remaining, without means of obtaining a new supply, I abandoned the field and returned home, trusting to be able at an early day to renew the attempt with a small steamer.

While crossing over from the east to the west side of Smith strait, I followed, during a portion of the way, nearly in the track of my predecessor, Captain Inglefield, and I was struck with the accuracy with which he had exhibited upon his chart the expansion of Smith strait; and, although the geographical positions which he has given to many prominent places are slightly inaccurate, as I had subsequent occasion to determine while upon shore, yet the points of the western coast which came successively into view were so clearly his discovery, that I have replaced upon the map the names which he appended to the various localities discovered by him. The highest land visible from the mouth of the strait on the west side, which is the eastern extremity of Bache island, bears, therefore, the name of Queen Victoria. Princess Maria bay occupies the northern side of Henry island, and Cape Albert its eastern extremity.

After leaving Whale sound I continued down the coast, and, under favorable circumstances, completed the survey of the shore, including Cadogen and Talbot inlets, as far south as Clarence Head. Here we came upon a heavy ice pack, and were obliged to hold to the eastward. Entering Whale sound, I had an excellent opportunity for delineating the shore-line of that remarkable inlet. Through a clear atmosphere I could trace the land around from the north to the south shore, thus proving the inlet to be a deep gulf, which, out of respect to the enterprising navigator who first penetrated its waters, I have designated as the Gulf of Captain Inglefield. Two prominent points of land on the northern side of the gulf were mistaken by Inglefield for islands, and I have applied to them the names which he has used. We found a colony of Esquimaux on the south side of Whale sound, and we remained long enough with them to become familiar with their habits, and to obtain some photographs of them.

During this period of the cruise every effort was made to obtain collections of specimens of natural history, and in this department, as well as in many others, I had frequent occasion to regret the smallness of my corps of workers. We, however, succeeded in obtaining

some valuable collections; these embrace dredgings from the various points visited, plants from several different localities, skins and skeletons of the principal mammals, skins of many of the Arctic birds, and a large number of skulls of Esquimaux. Our hunters captured upwards of two hundred reindeer. The walrus and seal of different varieties were also abundant. During the summer several species of waterfowl swarmed upon the islands and cliffs about the mouth of Smith strait. The most numerous of these were the little auk (*Uria alle*) and the eider duck, (*Somateria molissima*), several hundreds of which were captured. From these sources I had no difficulty in constantly supplying our party with fresh food, and to this I attribute in a great measure our entire exemption from disease.

Leaving Whale sound, we continued southward, and completed the survey of the eastern coast of North Baffin bay, from Cape Alexander to Granville bay. This survey was made independently of the charts of my predecessors. The shore-line surveyed on the eastern side, a portion of which is new discovery, equals about 600 miles, and on the western side, between Clarence Head on the south and Cape Union on the north, about 1,300 miles. It was with regret that I turned my back upon the scene of our year's labors, and entered Melville bay. After boring through the "pack" for 150 miles, we entered the southern water, and reached Upernavik on the 14th of August, and Disco island September 1. At both these places we were kindly and hospitably received by the Danish officials. At the latter place I had the satisfaction to meet the royal inspector, Mr. Olrik. Upon reaching Godhavn, I was kindly informed by Inspector Olrik that he had received orders from his government, framed in accordance with a request made by the government of the United States, directing him to afford such aid to the expedition as was in his power; and it gives me great pleasure to be able, on an occasion like the present, to acknowledge the important services rendered to the expedition by the Danish government and its officials in Greenland, exhibiting that characteristic generosity and intelligent appreciation which have uniformly marked their actions towards all previous explorations of a similar nature.

Our voyage from Godhavn southward was very stormy, and when off Halifax such damages were suffered as required us to put into that port for repairs. Our welcome there was very cordial and highly grateful to us. The admiral of her Britannic Majesty's fleet, then in Halifax harbor, generously tendered the use of the government conveniences for repairing my crippled vessel. To the officers of her Majesty's civil government, and of the squadron and garrison, and to the citizens of Halifax, the expedition is indebted for attentions which exhibited not less a friendly feeling for men who had for so long a time been deprived of many of the comforts of civilization than respect for the flag under which our explorations had been made.

Having sailed from Boston, I considered that a proper respect for those who gave me the vessel required that I should return to that port. Leaving Halifax on the 19th of October, we arrived in Boston on the 23d, after an absence of fifteen months and thirteen days.

MEMOIR OF GEOFFROY SAINT HILAIRE.

By M. FLOURENS,

PERPETUAL SECRETARY OF THE FRENCH ACADEMY OF SCIENCES.

TRANSLATED FOR THE SMITHSONIAN INSTITUTION BY C. A. ALEXANDER.

THIS Academy numbered among its members, in the last century, two brothers, one of whom left several useful treatises on botany, while the other is memorable as the first chemist who conceived a precise and practical idea respecting *affinities*. It was said with reference to the latter, by the most spiritual of the partisans of Descartes, Fontenelle, "that he had enunciated in 1718 a singular system—a table of affinities or relations of different substances in chemistry. These affinities," added Fontenelle, "gave uneasiness to some, who feared lest they should turn out to be attractions* in disguise, the more dangerous as persons of skill knew already too well how to endue them with seductive forms."

The distinction of the two brothers became a just ground of pride to their family, one of whose branches inhabited the small town of Etampes. There, in a home whose habits were still patriarchal, a grandmother was accustomed, in the long evenings, when her numerous grandchildren were grouped around her, to enchain their attention by recitals respecting her own time, in which the names of our two savans, among their relatives, did not fail perpetually to recur. To these recitals her simple admiration for renown, no less than her quality of grandmother, gave a real power; so that, on one occasion, a little boy, very delicate and sufficiently light-headed, was prompted to exclaim: "For my part, I, too, should like to be famous; but how to become so?" "By willing it strongly," replied the grandmother; "you bear the same name with those of whom I have been speaking; do as they have done." "And you will help me, grandmother?" cried the little enthusiast; an appeal which was responded to, on the part of the excellent dame, by presenting him with a copy of Plutarch's *Lives of Illustrious Men*.

It was thus that Etienne Geoffroy Saint Hilaire, born the 15th of April, 1772, was dreaming of future distinction, when his father announced that having obtained for him a scholarship in the college of Navarre, he was about to place him there. Here the poor boy was destined to find the path to fame encumbered with exercises and

* The term attraction, introduced by Newton as a fit word to designate the force which produced chemical combination, was in great favor in England, where the Newtonian philosophy was looked upon as applicable to every branch of science, while in France, on the contrary, where Descartes still reigned triumphant, attraction, the watchword of the enemy, was never heard but with dislike and suspicion.—TRANSLATOR.

translations which excessively wearied him. As a scholar he had little assiduity, and manifested no taste for anything but physics.

On leaving college many advantages were offered to determine him to the church, but this destination he steadfastly declined. His father, himself an advocate, proposed jurisprudence, but a short trial ended in disgust. From law he passed to medicine, but with no better result. To the adventurous spirit which already governed him it would seem that a career more free and more remote from the beaten paths was necessary for satisfaction or success.

Urged by a secret impulse towards the sciences, Geoffroy wished to follow the higher courses of instruction, and with this view was permitted to unite himself with the students at the college of the Cardinal Lemoine. The professors of this establishment were ecclesiastics. Here the good and judicious Lhomond consecrated his life to the production of works for the instruction of youth, whose very simplicity has maintained their superiority as models of that class of compositions, and Haüy, a regent of the college, had just made that celebrated discovery in mineralogy which changed the face of the science and inscribed his own name among those of men of the highest scientific genius. Lhomond, next to childhood, loved nothing so much as plants, and Hay had been led, through his devotion to this venerable friend, to join in the same botanical pursuits. In their peaceful promenades they were now followed, though at a distance, by a young scholar, who burned with no desire so great as that of being permitted to associate himself with these distinguished men. Nor was the opportunity long deferred: a casual interview occurred, in which Lhomond and Haüy were so much touched with the ingenuous expressions of interest and respect on the part of their young interlocutor that they thenceforth admitted him to a cordial intimacy.

Under the inspiration of Haüy, Geoffroy was not backward in conceiving a passion for mineralogy. Daubenton was then delivering a course in this science at the college of France, and it was his custom, after each lecture, to interrogate his pupils. Happening one day to question Geoffroy on crystallography, he was surprised at the answers, and observed, with great good nature: "Young man, you know more about it than I do." "I am but the echo of M. Haüy," replied Geoffroy. The gratitude implied in this ingenuous avowal did not fail to excite the interest of the professor, and that interest was ripened by incidents which soon followed into a lively attachment.

It was now 1792, and Geoffroy was twenty years of age; he began his serious life amidst the distractions which then afflicted our country. All the instruction he had received had been derived from priests, and at this deplorable epoch it was sufficient to bear that title to be marked for persecution.

His former masters of the college of Navarre were arrested and imprisoned in the church of Saint Firmin, converted into a prison. Geoffroy succeeded in obtaining access to them, and urged upon them a means of escape which he had devised, but which, animated by a sentiment of common interest with their companions in misfortune, they declined adopting. Later, however, he succeeded in having some of them, though at the peril of his own life. But

that which struck him with most consternation was the imprisonment of Haüy. Hastening as soon as he heard of it to Daubenton and other members of the Academy of Sciences, he procured in the name of that body a petition for the release of their distinguished associate. The order of enlargement was signed at ten o'clock at night, and Geoffroy instantly bore it in person to the prison. But here a new difficulty presented itself. "These great men," said Fontenelle, in speaking of the illustrious class of persons, whom none knew better than himself, "these great men are children;" and Haüy especially united to the most astonishing penetration of intellect the simplest of hearts. In the midst of such dangers as threatened him, Geoffroy found him wholly absorbed in reassorting his minerals, which had been thrown into confusion at the time of his arrest, and which he had succeeded in having brought to the prison. On no consideration would he consent to their removal at such an hour, and he was fixed, moreover, in his determination to hear mass the next morning before his departure. Accordingly, morning being come and mass duly heard, Haüy tranquilly withdrew to his humble cell and to his friend Lhomond, who, in turn, had been delivered by Tallien, one of his former pupils. But the cells they had quitted were destined to no long familiarity with their occupants: it was the eve of the terrible massacres of September.

Exhausted by violent emotions Geoffroy became ill, and retired to his family. The friends he left at Paris, though still overwhelmed by the tempest, did not cease to cherish a concern for him. "I communicated your letter to M. Lhomond," Haüy writes to him, "as soon as received, and we have never been so gay since you left us." To Daubenton, Haüy said: "Love and adopt my young deliverer;" and the injunction was observed to the letter. On the return of Geoffroy in 1793 he was received with marked affection by the now aged professor. We are at liberty to believe that, at a time of life when personal hopes are becoming extinguished, there may enter into the attachment of age for youth something of a hope to survive in the gratitude of a later generation. But the effective services of Daubenton were soon called into requisition, for the place of superintendent of the cabinet of zoology in the *Jardin des Plantes* having been left vacant by M. de Lacepede, Daubenton asked and obtained it for his young friend.

The Garden of Plants, founded by Louis XIII, enlarged by Louis XIV, and illustrated by the labors of Buffon, had become through those labors the centre of modern natural history. In 1790 Daubenton had presented to the Constituent Assembly the plan of a vast and complete institution, worthy of the ideas which had been communicated to him by the great naturalist himself. Two years later Bernardin de Saint Pierre, superintendent for a short time of the garden, called for the establishment of a menagerie, referring to the fact that Buffon had long desired to have that of Versailles, and adding that "the most useful remarks of that eloquent writer were inspired by the animals which he had himself studied, and his best-colored delineations were those of which they were the models; for the thoughts of nature," said Saint Pierre, "carry with them their

appropriate expression." In June, 1793, by a decree of the convention, the garden took the name of museum, and the instruction given there was extended to all branches of natural history, the number of chairs being at the same time raised from three to twelve. Two of the new ones were destined to zoology, one of them being given to Lamarck, while Pallas, the celebrated naturalist of the north, was designated by some for the other. Daubenton proposed Geoffroy. He was very young, it is true, but had already given evidence of a passion for labor. The paramount object with Daubenton, however, was to have an assurance that the influence of Buffon would be maintained, and the impulse he had given be carried out. "I take upon myself," he said, on seeing that Geoffroy hesitated, "the responsibility of your inexperience, and I have in your case some title to the authority of a father. Enter confidently upon the office of instruction in zoology, and may it one day be said that you have made of it a French science."

Thus we see Geoffroy a professor at the age of barely twenty-one. He has ingenuously described the embarrassment which he at first experienced: "Obliged to create everything, I acquired," he said, "the elements of natural history, in arranging and classifying the collections confided to my care." He opened, May 6, 1794, the first course of zoology which had existed in France. A fervid activity redoubled his success. The collections rapidly increased; but the menagerie imagined by Saint Pierre not being soon enough realized he improvised one. Word was brought him one morning that a leopard, a white bear, several mandrills, a panther, &c., were waiting his acceptance at the gate. The police had just prohibited the public exhibition of these animals. But the museum had as yet neither funds nor receptacle for a menagerie. What matter? Geoffroy accepts all, and establishes as he best could his coveted but terrible guests under his windows. He hastens to communicate his good fortune to his colleagues, and they, a little surprised and, it may be, alarmed, quickly provided the means of securely confining these formidable acquisitions.

About the time we speak of, the venerable M. Tessier, who had sought refuge in Normandy from the violence of the revolution, announced to his friends from the place of his retreat that he had just made *the best of his discoveries*, and called upon them to open the career of the sciences to *another Delambre*. His letter was accompanied by some memoirs drawn up by his protégé. These were referred to Geoffroy, who, struck with enthusiasm at their perusal, and yielding to a generous inspiration, wrote immediately to their author: "Come and fulfil among us the part of a Linnæus—of another law-giver of natural history." It would be impossible to characterize Cuvier more happily.

On the arrival of the *new Linnæus*, Geoffroy devoted himself without reserve to his interests. To admire, to praise, and to enjoy the success of others, was one of the felicities of his life. Having a lodge at the museum, he shared it with Cuvier, and threw open to him all the collections. A mutual devotion to study naturally united their labors, among the first results of which, two may be here no-

ticed. Of one, the object was the *classification of mammifers*—and here the skilfully-sustained idea of the *subordination of characters*, which was the great resource of Cuvier, predominates. The other was the history of the *makis*, or apes of Madagascar; and in this we already discern traces of the *unity of composition*,* to which Geoffroy has subjected all comparative anatomy. It was easy to foresee that two intellects, whose philosophic processes were so different, would not be long in finding separate paths. Meanwhile their confiding friendship rendered them perfectly happy. In a science till then so little cultivated each result at which they arrived was new to all the world. How often have we heard both in after years recall with complacency that early and enchanted time when, in the words of one of them, (Cuvier,) “they never breakfasted without having first made a discovery.” The truth is, so little was then known of the structure of animals that it was almost impossible to make the dissection of one without perceiving some new organic details.

It was in vain that the jealous friends of Geoffroy expostulated that he was laying himself too open, and preparing for himself a designing rival, perhaps a master. The effect which these representations produced on him has been recorded by Cuvier, in terms which will enure to the lasting honor of Geoffroy. “They endeavored,” he says, “to make him believe that he ought not to befriend me, that by and by I should have the sole credit of our labors; but this excellent young man declared to me, with entire earnestness of heart, that such advice made him unhappy, and that nothing would ever have the power to change his conduct towards me.”

The labors of Geoffroy were conducting him at a rapid pace towards the Institute, when, at the commencement of 1798, Berthollet came to say to him: “Come with Monge and me; we will be companions; Bonaparte is to be our general.” Whither were they going? It was what no one knew. In this very mystery there was one attraction the more for Geoffroy. He embarked, and his lucky star conducted him to Egypt.

From the moment of his arrival Geoffroy was seized with the desire of exploring everything. He rummages the soil, the tombs, the ruins. He frequents the catacombs, those gloomy and antique museums, where the Egyptians of old collected the remains of creatures which were their cotemporaries, and laid them up, as it were, a deposit for the study of after times.

Geoffroy brought us from Egypt specimens of the crocodile and the ibis, entire and perfectly preserved, skeletons of the ichneumon, the ox, &c. These animals, which lived two or three thousand years ago, compared with those of to-day are found in no respect to differ from them. Thus we owe to him the strongest proof that could be given

* “It seems that nature has shut herself up within certain limits, and has formed all living beings on one sole plan, essentially the same in principle, but varied in a thousand ways in all the accessory parts. Thus, in each class of animals, the forms, however varied, all result at bottom from organs common to all; nature has forbidden herself the employment of new ones.”—*Dissertation sur les Makis*.—*Magasin Encyclopédique*, t. vii, p. 20, 1796.

of the fixedness of species, an important fact, which he was destined afterwards to dispute.

A special interest attaches to the human mummies which he collected. Volney had just revived the idea that the people of ancient Egypt belonged to the negro race, and considered the question determined by one or two phrases of certain historians, who say, in effect, that the skin of the Egyptians was black. Volney is mistaken. The color of the skin is here not the decisive feature; it is the form of the skull, and the skull of the mummies leaves not a doubt. Whatever may have been their tint, the celebrated people, among whom all tradition places the first cradle of the sciences, pertained to the same race of men with ourselves.

Voltaire has styled Herodotus, "The father of history, who has bequeathed us so many fables." Geoffroy seems to have taken upon himself the task of justifying, as far as the naturalist is concerned, whatever is most marvellous in the honest statements of the first of observers. Herodotus tells us, for instance, that the crocodile is, of all animals, that which is proportionably the smallest at first and largest at full size; the only one whose upper jaw is moveable upon the lower; the only one which has no tongue, &c.; and all this may be said to be true, if due allowance be made for the inaccurate language of a writer who is no man of science and makes no pretensions to be so. The crocodile, which attains as much as seventeen cubits in length, springs from an egg scarcely seventeen lines long. Its upper jaw does not move on the skull, but this jaw and the skull, being united, move on the lower one. It has a tongue, but so short that it can make no use of it. The historian goes on to say that when the crocodile lays its head on the bank of the Nile to inhale air, a small bird enters with confidence into the redoubtable orifice of its throat and shelters there in safety, while the crocodile does it no hurt nor makes even a single movement for fear of alarming its little guest. This Geoffroy had witnessed: a minute bird (the *petit pluvier* of Buffon) does, in fact, enter the throat of the crocodile, and exercises with entire impunity the functions of relieving the animal of the insects which attach themselves to its palate and which the shortness of its tongue disables it from removing by any effort of its own.

From the time of his arrival in Egypt Geoffroy had applied himself to an attentive study of the fishes of the Nile. Among those which he most wished to examine was the *Silurus electricus*, which the Arabs, in their language, not unaptly call the *thunderbolt*. Though he had often inquired for this fish, he was able to obtain a specimen only a few days before the capitulation of Alexandria, and it was amidst the perils of the siege, whilst bullets were whistling around his ears, that he might have been seen, like another Archimedes, absorbed in the meditation of problems of equal interest. His research was directed to that secret bond which connects electricity with the principle of life. But Geoffroy, whatever his passion for knowledge, found, as others have done, that the impenetrable mystery of life is, like the Isis of Egypt, covered with a veil which no mortal can raise. It was in the midst of these preoccupations that he learned that, by

an article of this unfortunate capitulation, the French savans were to be despoiled of the fruits of the researches from which they promised themselves so much honor. Fired with indignation, he proposed to his colleagues to employ the time which remained before the execution of the treaty in burning their collections. This sacrifice had been determined on, when the English agent, struck with respect, paused before so energetic a resolution and the article was erased.

After four years absence Geoffroy returned from Egypt, "loaded," as Fontenelle said of Tournefort returning from Greece, "with the spoils of the East." As if inspired with new ardor for study, we find his re-entrance into the museum marked by even multiplied labors in the two sciences which have occupied his life, zoology and comparative anatomy. In the former, it is the equally accurate and intuitive perception of the analogy of natural beings, what he himself called the *instinct of affinities*, which peculiarly distinguishes him. It was this instinct which guided him to a higher law of method, by virtue of which, in conjunction with the principle of the *subordination of organs*, he established that of *changeable subordinations*; the same characteristic which predominates in one group being possibly but a subordinate characteristic in another. Thus the teeth, a dominant characteristic in the group of carnivorous animals, form but a subordinate one in the group of bats, marsupials, &c., and, if followed out, would break up all the relations which constitute the family in the latter group. Viewing method thus under a new aspect, Geoffroy finds in general classification no other merit than the negative one of leaving the natural and direct relationship of species unbroken. Thus regarded, method is no longer a series of divisions and interruptions, but a chain of relations which mutually call for and adapt themselves to one another. In the time of Linnæus, it was the wide intervals, the marked differences which engaged the attention of naturalists, because the number of known species was then inconsiderable. In proportion as that number increased, (and it increases continually,) marked differences become effaced, the intermediate shades melt into one another and the wide intervals are filled up. The unity of the animal kingdom stands revealed, and we comprehend the profound expression of Buffon, that "shadings (*les nuances*) are the great work of nature."

If, in zoology, the predominant idea of Geoffroy was the unity of the animal kingdom, in comparative anatomy it was his constant aim to prove that unity by the unity of composition. Thus all his researches in this line tended to the discovery of analogies. Beginning with the comparative study of the members, he passed from thence to that of the skull. The skull of the crocodile and of fishes is composed of twenty-five or twenty-six bones, while that of birds and adult quadrupeds has but eight or ten. It was necessary to reconcile this apparent diversity with the theory of unity, and one of those happy inspirations which fall only to the lot of genius led Geoffroy to examine the skull of the foetus in birds and quadrupeds. Here all the primitive bones, which at a later period will unite to form a com-

plex structure, are still separate, and the problem is resolved: the number of bones is found to be everywhere the same.

These ingenious investigations, which laid the foundation of entirely new views in science, date from the year 1807. It was in that year that Geoffroy, a place having become vacant in the academy, offered himself as a candidate. On this occasion having submitted some of his memoirs to the celebrated geometer Lagrange, he was asked by the latter what he thought of his competitor? "We know that he is an accomplished entomologist; but is he a Reaumur or Fabricius?" "A Fabricius," replied Geoffroy. "Yet for my part, young man," rejoined Lagrange, "I prefer a few such pages as you have recently read before the academy to whole volumes after the manner of Fabricius." Cuvier, in congratulating him on his nomination, which took place 14th September of the above year, remarked to him, "I am the more gratified because I had reproached myself with occupying a place which rightfully belonged to you." This Geoffroy often pleased himself with recalling, ingenuously adding, that the expressions of Cuvier surprised him, as the idea had never occurred to him that his own nomination could possibly precede that of his distinguished friend.

In 1810 Geoffroy proceeded to Portugal to execute a commission of the emperor, who, wishing that all the remarkable objects in foreign museums should be represented in those of France, sent him to visit that of Lisbon, which abounded especially in rare and valuable specimens from Brazil. Before setting out, he provided himself with all that could be spared from our own galleries, and though invested with full powers as a commissioner, in a country occupied by our troops, he took nothing except on the terms of an exchange. This generous proceeding smoothed all difficulties, and he had the satisfaction, not only of returning with ample collections, but of having gained for his own country a new title to the respect of foreign nations.

In his whole scientific career, a career at once so laborious and enthusiastic, Geoffroy may be said to have realized the idea of a celebrated writer, "that he who sees one truth thoroughly, sees always an infinity of others, and that he who should see all truths would at last see but one." To date from the memoir which opened to him the doors of the academy, his whole thoughts, meditations, and researches were bent on one object: the study of the *unity of composition* in animals. This led him to style himself in the words of Saint Augustine: *homo unius libri*, the man of a single book. It was in 1818, that he ventured finally to assign this unity of composition as the first and supreme law of the whole animal kingdom, and that he gave to the world the work since become so well known under the title of the theory of analogues or anatomical philosophy.*

* The exact title of this work is: *Philosophie Anatomique:—Des organes respiratoires sous le rapport de la détermination et de l'identité de leur pièces osseuses*. It consists of four memoirs, preceded by a preliminary discourse on the author's theory. "The views," he says, "to which we are conducted by the presentiment that we shall always find in each family the organic parts which we have observed in another, are what I have embraced in this work under the denomination of the Theory of Analogues."

Buffon had already remarked that there exists a constant conformity, a sustained design, a hidden resemblance, more wonderful than the apparent diversities: "It would seem," he eloquently said, "that the Supreme Being had chosen to employ but one idea, and at the same time to vary it in all possible ways, to the end that man might equally admire the magnificence of the execution and the simplicity of the design." This unity of plan or idea was seen, after Buffon, by Vicq-d'Azyr and by Camper: "Nature," says the former, "seems always to work after a primitive and general pattern, from which she never departs without regret, and hence the two characters which appear to be impressed on all beings, that of constancy in the type and variety in the modifications." Geoffroy, in turn, became impressed with these views, but in a manner so original and profound as to entitle him to be considered the author of a new science of philosophical anatomy, unknown to all who had preceded him.

The great and proper merit of Geoffroy is to have sought the means of study and comparison in the primitive and constitutive elements of the organs. Before him, it was the *adult state* which had been studied, where we find only the composite result: in the *fœtal state*, to which he directed his researches, the primitive nucleus, the simple fact, stands revealed, destined in all cases to be the subject of the same fixed and determinate laws of development, complication, and relative position.* This unity of law is the last and highest proof of the unity of design or idea, and thus the profoundest science passes naturally into the most elevated philosophy. When Newton, at the close of his immortal labors, recognized the fact that each globe or world is subjected, not to its own proper or distinctive law, but all to one sole and common law, he recorded the expressions so worthy the admiration of every reflective mind: "It is certain that, as all bears the impress of one sole design, all must be subject to one only and the same Being."

It was impossible that Geoffroy should have made the general idea of the unity of *composition* in animals the subject of such exhaustive meditation without having had his attention directed to those particular cases of anomalous or incomplete development which in ages

* I. *Law of development.* For every organ there is a maximum and a minimum of development; and no organ passes abruptly from one of these conditions to the other. *A fortiori*, no organ disappears abruptly. The *cetacea*, which have no hinder members, have still a small bone, the last vestige of these members, hidden under the skin; the *carnivora*, which have no clavicle, have a small bone, its last vestige, suspended in the flesh, &c.

II. *Law of complication*, or, more precisely, of *compensation*. When a part is developed beyond proportion, it is usually seen that some other part is diminished or even effaced. Among reptiles, the frog, which has members, has not ribs; serpents which have many ribs, have no members, &c.

III. *Law of relative position*, or *principle of connexions*. All parts always preserve, in relation to one another, the same place: the skull in relation to the vertebræ, the vertebræ in relation to the members, all parts of the members, each the same place in its relation to other parts, &c.

The principle of connexions is the chief, and, if I may say so, the operative principle of M. Geoffroy's theory: it is this which enables him to recognize, which unmask to him each part through all the mutations of *form*, of *volume*, of *use*, &c. These may, and, in effect, do all change; but one thing the *position*, is invariable. "An organ," says Geoffroy, "is altered, atrophied, annihilated, sooner than transposed."

of total ignorance passed under the name of *monstrosities*. In the last century the question regarding monsters had been the subject of a long debate between two members of the academy, Winslow and Lemery, of whom the first may be said to have completed in the 18th century the anatomy of the human body, commenced by Vesalius in the 16th; the second was the son of that Nicholas Lemery whom Mairan styled the Descartes of chemistry. Lemery was himself a Cartesian, Winslow altogether a Leibnitzian: the former held that there were no monsters except from accidental and mechanical causes; the latter simply supposed the pre-existence of monsters, as Leibnitz had supposed the pre-existence of beings. The dispute lasted for ten years, until the death of Lemery in 1743; and, as was remarked by Fontenelle, "it was not possible, as things went on, that it could be terminated otherwise than by the death of one of the disputants, for at every new explanation offered by Lemery, Winslow launched at him a new monster." It was reserved for Geoffroy to carry the theory of *accidental causes* to a point of such clear and incontestable evidence that it is no longer feasible to seek for any other. And this, by virtue of two principles which suffice to explain everything, the principle of *arrest of development* and that of *attraction of similar parts*,* principles educed as well from his own ideas as from the concurrent labors of the eminent anatomist, Serres, who was the friend of his whole life. The result of the long and persistent inquiries of Geoffroy on this subject may be summed up in the expression: there are no monsters; there are merely accidental and secondary anomalies.

In the first volume of his *Philosophie Anatomique*, wherein he laid the foundations of his system, the principle of *unity of composition* is applied, in a direct manner at least, only to vertebrate animals; and, confined within these limits, this important principle could not be

* By means of the first of these principles Geoffroy explains all monsters by defect; by the second all double monsters. The parts which are wanting, or of which there is only a rudiment or vestige, are abortive, that is, parts arrested in their development. When two foetuses or germs unite, so as to produce the *double monstrosity*, they always unite by *similar parts*, by similar tissues or organs; the heart of one foetus uniting with the heart of another, the brain with the brain, the half of the pelvis of one with the half of that of the other, &c. This attraction of similar parts received from Geoffroy the more abstract name of attraction of self for self, (*soi pour soi*), and was regarded by him as a general law of nature, though we here consider it only as a physiological principle. Lemery had already said: "A reflection is forced upon us by a fact often repeated in the subjects before us, the fact that all destructions and regenerations of parts which have there taken place have only done so through the reciprocal action of two similar parts. The stomach, for instance, having effected with another stomach what it could not do with a liver, is there not room to conjecture that homogeneity of substance permits in the first case what heterogeneity prevents in the second?"—(*Mém. de l'Académie des Sciences*, p. 351, 354, an. 1740.)

In 1822 Geoffroy collected his early memoirs on the subject in a volume entitled *Philosophie Anatomique: Des Monstruosités Humaines*, and in 1827 published in the *Dictionnaire Classique d'Histoire Naturelle* an article, *Considérations Générales sur les Monstres*, which contains the most precise and elaborate digest of his theories. His son, Isidore Geoffroy, connecting his own studies with those of his father, published in 1832 the most important and complete work on this subject which there is room to desire, entitled *Traité de Tératologie*, or a general and special history of the anomalies of organization.—(See also *Recherches d'Anatomie Transcendante*, &c., par M. Serres—Theory of Growth and Deformity applied to explain the Organization of Ritta-Christina; Paris, 1833. Tr.)

contested. In 1820 he proposed to extend it to articulate animals,* and opposition at once declared itself. Cuvier let fall some expressions of impatience and disapprobation. In 1830 he proceeded to include the mollusks within the same principle, and the veil was rent which had thus far covered the dissatisfaction of Cuvier. The first claim of Cuvier to renown had consisted in a reformation of the entire classification of the animal kingdom. He excelled in disentangling, in description, in characterizing with precision both things and ideas. Almost all the animals without vertebræ had been confounded together. It was he who separated the zoophytes from the mollusks, the mollusks from the articulata, and these three groups established, he had made a fourth group of all the vertebrate animals united in one bond. He had thus four schemes or types essentially distinct, and the classification of the animal kingdom, regarded in its great masses, might be considered as fixed. But now this symmetrical arrangement, the fruit of so faultless an application of method, seemed every day more and more menaced by the progress of the ideas of Geoffroy, who, for his part, would see but one scheme and a single type.

The discussion was introduced into the Academy of Sciences, and never did a keener controversy take place between two adversaries more resolute and unyielding, better fortified with resources for a combat long foreseen, and, if the expression may be used, more learnedly prepared not to agree with one another. Between the two, moreover, there was a characteristic difference: in one there was vast capacity, guided by a cold and luminous reason; in the other glowing enthusiasm, heightened by flashes of genius. Outside of the academy and even of France the disturbance was propagated to all countries where men thought upon such subjects. We might have imagined ourselves transported to those ancient times when the sects of philosophy agitated states by the shock of their opinions. The world, in effect, took sides. The more austere and regular thinkers, those who were disposed to regard the rigorous logic of science with more favor than its rapid intuitions, took part with Cuvier; the hardier spirits ranged themselves on the side of Geoffroy. From the bosom of Germany the now aged Goethe sent him an applauding suffrage. Indeed, so warmly was the interest of the question felt by Goethe that, meeting a friend in July, 1830, he exclaimed, "You have heard the news from Paris; what think you of this great event? The volcano has burst forth, and all is in flames." "It is, indeed, a fearful account," replied the other, "and from the point which things have reached, we may well expect the expulsion of the royal family." "What! talk you of royal families?" rejoined Goethe. "I am speaking of the session of the Academy of Sciences; it is there that the fact of real

* See his *Memoirs sur un squelette chez les Insectes*, (read before the Academy January 3, 1820; *Sur quelques Règles Fondamentales de Philosophie Naturelle*, January 17, 1820; *Sur une Colonne Vertébrale, &c., dans les Crustacés*, February 21, 1820.

importance has transpired, and the result is a revolution in the human intellect."*

And in effect, though the direct discussion on this occasion might seem to turn upon the number or relative position of certain organs, the conflict was essentially that of two philosophies which will forever dispute the ascendancy: the philosophy of specific facts and that of general ideas. In these imposing problems it will always constitute a strong attraction to the human mind that it seems ever on the point of arriving at a term which forever flies before it. The strife between the two systems or methods did not commence with Aristotle and Plato, nor will it terminate with Cuvier and Geoffroy. Even considered by itself, the question of the resemblance or the difference of creatures is one without limits. The more animals are studied the more are we struck with their diversities, but at the same time the more do we discover of their resemblances. This truth, which did not escape the penetration of Aristotle, led him to apply to animals the name of analogues, or beings similar but diversified. The discussion before the academy produced the usual effect; the two adversaries withdrew, each somewhat more confirmed in his own views. Geoffroy gave to the public a general view of his opinions under the title of *Principes philosophiques de l'unité de composition*; and Cuvier announced that he should publish a summary of his under the title *De la variété de composition dans les animaux*.

These two personages, by the brilliancy and force of their ideas, by the very opposition of their doctrines, mark a new and memorable epoch in science. When Cuvier, in the last year of the last century, published his *Leçons d'anatomie comparée*, the admiration excited was without bounds. The grandeur of the results, the comprehensiveness of principles, equally certain and unexpected, struck every one with astonishment. The same hand which had reared the science of *comparative anatomy* founded one still more surprising, the science of lost existences. At the voice of genius the earth seemed once more repopled with its primitive inhabitants.

To these general and transcendent views succeeded the study of

* Apart from its scientific import, Goethe had both personal and national grounds for the extraordinary interest in the subject which drew from him the manifestation here mentioned. In a paper which he published in reference to the discussion in the French Academy, (*Sämmtliche Werke*; Philadelphia, 1856: Band 6, seite 471,) he takes occasion to relate that the appearance of the first volume of Buffon's *HISTOIRE NATURELLE* occurred in the same year with his own birth, 1749; and the successive volumes becoming the objects of his earliest interest, awakened in him a love for the study of natural objects, which soon led him into the field of controversy as well as of observation. On the other hand, while his fellow-countrymen, Camper, Kielmeyer, Meckel, Oken, Spix, Tiedemann, &c., are cited with respect by Geoffroy, and recognized as allies in the attempt to establish the unity of the animal kingdom, Cuvier, as Goethe complains, had publicly asserted that "behind this theory of analogies there lurked, though in a confused manner, another old and exploded theory which certain *Germans* were trying to revive in order to favor the pantheistical system which they called natural philosophy." This charge Goethe of course repels, alleging that "the two processes of reasoning (*Denkweise*) from the universal to the particular, and from the particular to the universal, are equally indispensable; and that, notwithstanding their habitual antagonism, the more vivaciously these mental functions, like in and out breathing, are carried on together, the better will be the result for science and its friends."—Tr.

details. Facts were no more than facts, and the harvest of grand ideas appeared to have been gathered. It was at this point that a new genius arose, bold, original, and penetrating. The whole science becomes at once reanimated ; the fact is vivified by the idea ; conjecture unites itself with the most exact observation. The new adventurer overleaps the recognized boundaries, and, beyond those boundaries, establishes a new science, to which he communicates something essentially and pointedly his own : his daring, his love of abstract and hazardous combinations, his sudden and unforeseen intuitions. The renown of Geoffroy will consist in his having laid the foundation of the profound science of the intimate nature of beings, *philosophic anatomy*.

To his principal ideas on the laws of animal organization, Geoffroy, towards the latter years of his life, added some others which are but accessory in relation to the former. These were his views on the *mutability* of species, on the *filiation* of existing species with lost ones, and that other *filiation* of æras and species which would make of all beings only successive stages of one and the same being. These views, in which, it must be confessed, the real does not sufficiently disengage itself from the ideal, are not peculiar to Geoffroy. They form no part of that noble assemblage of new and fundamental laws which constitute his proper doctrine and to which his name will always be attached.

From the first institution of the faculty of sciences, Geoffroy had been called to one of its chairs of anatomy and general zoology. Here it was that he indulged himself in the development of his philosophic ideas. In the chair which he filled at the museum for nearly half a century, his principal object was the study of the *relations of beings*, a study which he carried so far that it is to be regretted he has left nothing written upon it.

What gave most force to the lessons of Geoffroy was his enthusiastic admiration for the sciences. He would not admit that bounds could be prescribed to their progress, but expected and required of them the ever-renewed emotions which constituted the excitement and charm of his life. In familiar intercourse the inspirations of a rich and rapid imagination imparted to his conversation not only fertility of ideas but a certain elasticity of thought, whose manifestations were often as striking as unexpected. He was too much indebted, indeed, to his imagination not to give it the rein ; at times perhaps too freely ; for to this source might be imputed the few moments of estrangement which shadowed the course of his friendships. Yet, even at such moments, it was but necessary to address one's self to his heart to find all those traits of youth restored which governed, as we have seen, his earlier intercourse with Cuvier. "The excellent young man," as Cuvier then characterized him, survived to the last ; always under the dominion of some generous impulse, always ready to spend himself, and, what is still more rare, to efface himself, in the service of another ; always confiding and open with his friends, as in the first stages of life. Nor were the acts of generosity and devotion with which his life was filled always unattended with personal danger. We have seen him risking his

safety at St. Firmin to effect the deliverance of his former teachers, and in 1793 he sheltered under his roof the unfortunate Roucher, author of the poem of "The Months." Again, in 1830, the same roof became the asylum of de Quelen, archbishop of Paris, a fugitive at the time from popular menace and pursuit. To a friend who pointed out to him the danger which he incurred by this new act of generosity, he replied, "Bear with me this one time more ; you know I am an old offender in this way."

He allowed himself no relaxation from his labors, except in the tender intercourse of his family. To this no one could surrender himself with more perfect abandonment and relish. He had the satisfaction of early recognizing in his son a noble intelligence, to which he might securely confide the care of his fame and the maintenance of his doctrines. "Judge," said he, one day to a friend, "whether I ought not to be happy. Behold here the most cherished treasures of my son ;" and so saying he opened a closet in which the young boy had religiously collected every thing which had been written concerning his father's labors.

Voltaire, in a celebrated verse, had boldly proclaimed of himself—

" Yes, I love glory, and I dare avow it."

With an equal love of celebrity Geoffroy was as little disposed to dissemble it. Perhaps no one ever aspired to renown more frankly and openly, and it has been given to few solely devoted to the sciences to obtain a greater share of it. His views, his principles, even his language, have penetrated everywhere, and left everywhere the impress of his influence. All the celebrated academies numbered him among their members. Learned strangers made the pilgrimage of Paris with the sole purpose of seeing him. Our own provinces and the neighboring nations, especially Germany, that home of Goethe, that country of the Okenes, the Caruses, and the Spixes, sent every year a throng of young neophytes who desired to hear and to know this chief of a great school.

In a retired corner of the museum is a little hermitage where Daubenton, a half century before, had installed Geoffroy. It was in this domicile, endeared to him by so many recollections, that the latter, when advanced in years, saw himself surrounded by disciples who ascribed to him the same infallibility which he himself accorded to the sciences, and in this regard his belief well entitled him to be the head of a school of believers. Towards the close of his life he was affected with total blindness, but this was attended with many alleviations. His latter days were soothed by the caresses of two young children, for whom he fondly anticipated a career like his own, and the pious cares of a daughter, in whom his own qualities were mirrored, surrounded him with tender assiduities. The noble companion of his life survived to press his faltering hands, the mother of a son who was the solace and glory of his old age.

Geoffroy expired tranquilly June 19, 1844. This bold investigator of nature, who had cast upon her mysteries so penetrating a glance, in receiving the last farewell of a beloved child, said to her with calmness : " Be assured, my daughter, we shall meet again !"

THE SUN: ITS CHEMICAL ANALYSIS,

ACCORDING TO

THE RECENT DISCOVERIES OF M.M. KIRCHOFF AND BUNSEN.

BY AUGUSTE LAUGEL.

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SCIENCE has just succeeded in transcending one of those intervals which scarcely the most daring cosmogony or unbridled fancy had ventured to traverse. Astronomy had weighed and measured the sun; chemistry, aided by physics, to-day makes an analysis of it. It says to us, "The solar atmosphere comprises, in the state of vapor, a great number of the substances which compose our planet, iron, the metals which enter into the composition of our alkalies and earth, potassium, sodium, strontium, calcium, barium; it contains chrome, nickel, copper, and zinc; on the other hand, neither gold, nor silver, nor mercury, nor aluminum, nor tin, nor lead, nor antimony, nor arsenic, nor silicium, at least in notable quantities, are to be found in it. Among the metals at once telluric and solar are to be included *cæsium* and *rubidium*, metals yesterday unknown, which had escaped all the processes of ordinary chemical analysis." These affirmations of science are so surprising that we might be tempted at first to consign them, without examination, to the reveries of a Swift, a moralist turned chemist, or the imaginings of some new Micromegas; but the labors of M.M. Kirchoff and Bunsen present not the slightest trace of extravagance. We have here no romance, more or less ingenious, where the plurality of habitable worlds is discussed, where hypotheses are unceremoniously mingled with facts, cosmic mysteries with the realities of the sublunary world. The discoveries of the two German savans are founded on the most rigorous observations, and deserve to be classed among the most admirable acquisitions of the positive sciences. Their method, at the same time that it has to some extent given the means of exploring the sun from a distance, has furnished to chemical analysis a process of investigation of an unheard of, almost miraculous, delicacy. We may boldly affirm that by this method mineralogy may be revived and renovated, that chemistry will enlarge its domain and be able to master problems heretofore irresolvable. Meanwhile the capital result of these admirable researches—the one which most interests the philosophy of nature—is already attained: the identity of the materials which compose the sun and the earth has been demonstrated. The chemical unity of our planetary system has been placed beyond dispute.

This is not a discovery to which we can be indifferent. Man had long

regarded as the centre of the cosmos the little eccentric ball which carries him; he thought that between himself and mineral or organic nature there was no bond or relationship. We know now that materially we differ in nothing from all that surrounds us; we are living laboratories through which circulate all terrestrial substances. At this moment it is demonstrated that these terrestrial substances occupy our whole planetary system. We were already united with the animal, the plant, the water, the dust, with the infinitely little; we are now united with the sun, with the infinitely great.

The alchemists had instinctively suspected the unity of chemical composition of the planetary system; at least, they had established, in virtue of certain mystic ideas, relations between the different metals and the bodies which revolve around the sun; they never forgot the stars in studying the *great problem* of the transmutation of metals. We must needs be indulgent towards these aberrations of the human intellect, for truth itself has at times such an aspect of strangeness and magic as to affect the mind with doubt and bewilderment. The imagination must be poor, indeed, to look with indifference on the experiments of M.M. Kirchoff and Bunsen. The material of the sun analyzed in the light which it transmits to us! The most subtle and most inaccessible of things subjected to the most precise appreciation! Is there not here something to call forth astonishment and admiration? Into his darkened chamber the physicist admits a solar ray; there, tranquilly and at his ease, he compares his artificial lights with that light which inundates the universe, which pours life and heat to distances which thought cannot measure, and from this comparison he succeeds in deducing a complete theory of the physical and chemical constitution of the sun, of the grand phenomena of which that star is the theatre, of the spots which astronomers descry in it.

The recent labors of M.M. Kirchoff and Bunsen are based on an analysis of the solar light. To analyze is to decompose; but we can only decompose that which is not simple. The solar light in effect is not a simple light; a ray, however attenuate we suppose it, traversing the eye of a needle, or some crevice incomparably more narrow, is not homogeneous; it is composed of an infinity of differently colored rays, which, united in a pencil, constitute what we call white light. We have but to cast our eyes around to comprehend that the light of the sun comprises all colors; the diversified world which surrounds us is not a sketch, it is a picture. If the solar beam were simple, all objects would appear to us with the simple contrasts of light and shadow, as in photographs: the greatest charm of nature would be destroyed. The color does not belong to the objects, for when the sun has disappeared beneath the horizon all tints vanish in the same darkness.

Is there not a means of decomposing this ray of light, which we just now imagined as traversing an aperture, in such a way as to separate the different rays that compose it? Nothing is easier; it suffices to make it traverse a prism of glass by which the different rays are unequally refracted. This phenomenon of refraction, which

is produced whenever the luminous rays pass from one substance into another, explains all that play of light which we witness in the water, in the atmosphere, in all transparent mediums. We owe to Newton the first scientific explanation of it.

Let us suppose ourselves in a chamber entirely darkened, into which light enters only by an extremely narrow slit made in a shutter. Let a glass prism be presented in the line which the entering sheet of rays is traversing, and a leaf of paper be placed at a distance of some feet beyond and opposite the prism. The different rays which compose the white light are not refracted in the same degree in passing from the air into the glass, nor again in quitting the glass to traverse the air anew: consequently, in place of a luminous white line, we shall see on the paper a rectangle covered with differently colored bands. Newton distinguished therein seven principal colors: violet, indigo, blue, green, yellow, orange, and red; in reality, the tints pass into one another by an insensible and harmonious transition. To this expansion of the luminous beam has been given the name of *solar spectrum*, though with little justice, for nothing spectral can attach itself in idea to that beautiful sheet of light, whose tones the richest pallet would fail to reproduce. The colored bands of the rainbow are merely a solar spectrum, pale and much weakened, produced by the refraction of the rays in the minute drops of rain; the play of light which is so fine in soap bubbles better represents the brilliancy of the spectrum in the darkened chamber.

So long as curiosity was limited to the simple effects produced by the interposition of the prism and the reception of the refracted rays on a sheet of paper or other white surface, there was nothing seen in the spectrum but the seven elementary colors, without further discoveries; but the spectrum, like every luminous object, may be studied with magnifying optical instruments, and it was by exploring it in this way that, about 1814, the German savant Fraunhofer remarked some singular properties, whose discovery will immortalize his name. The spectrum, as we have seen, is formed of an infinite number of bands of different tints united together; the flag, as it were, of nature, not *tricolore*, but *omnicolore*; and among these colored parallel zones Fraunhofer was the first to perceive bands or rather lines of black, not only towards the two extremities of the spectrum, where the light is merged in the surrounding obscurity, but in the most brilliant parts and in all the colors. He recognized these lines as having the same invariable place in the spectrum, and since that time they have preserved the alphabetic name which he assigned them: we still say the line A, B, or C, of Fraunhofer, and in thus speaking physicists know at once in what part of the spectrum these rays are found.

With more delicate instruments and more perfect prisms, there have been observed in the spectrum many more dark lines than Fraunhofer had indicated. In 1860, the English philosopher Sir David Brewster, to whom optics owes so many happy discoveries, presented a drawing of the spectrum crossed by a multitude of these lines, and M. Kirchhoff has employed, in the course of the observations just completed, so delicate an apparatus that, to use his own expression,

several thousands of dark lines are distinguishable in the solar spectrum.

A phenomenon having been once recognized, it remains for reason to interpret it. How are we to understand this fact, that the light includes obscure spaces, and that when the white ray spreads out into the iridescent band, there should be vacuities in the series of colored rays? Each of these rays has a power of refraction proper to itself; it is by virtue, indeed, of this difference of refraction that the white light is decomposed in the prism; but how is it that rays of a certain refrangibility are deficient, while those whose refrangibility differs but by an infinitely small amount, more or less, manifest themselves? The light which we call white—would thus seem, if we might so speak, not to be *complete* light? Has it not lost something in coming from its focus to the eye, either in the sun itself, or in the terrestrial atmosphere? It is certain that the light loses some of its rays in traversing the ærial envelope of our planet. Sir David Brewster first brought this to notice; he showed that new black lines appear in the solar spectrum when the sun approaches the horizon, because the luminous rays pass through a greater space in the atmosphere before reaching us. These dark lines, however, which are due to the movement of the sun, are to be carefully distinguished from the invariable, normal lines which always show themselves, whatever may be the altitude of the sun in the sky. If the first are to be explained by atmospheric absorption, the second can only be owing to an absorption which takes place at the sun itself.

The explanation of the dark lines by an absorption of rays in the solar atmosphere was proposed in 1847 by M. A. Mathiessen in a communication made to the Academy of Sciences of Paris. MM. Brewster and Gladstone both adopted it; the former suggesting at the same time a means of verifying this hypothesis. According to the English physicist, if the lines are due to the absorbing power of the solar atmosphere, which would arrest certain luminous rays in preference to others, the spectrum ought to be more furrowed with the dark lines in proportion as the rays which produce it issue from points nearer the edge of the solar disc; admitting that the rays from the edge traverse the solar atmosphere through a greater space than those which emanate from the centre. M. Kirchoff points out, with good reason, that this inference would be unavoidable if the atmosphere of the sun were inconsiderable in comparison with the diameter of that body; but everything leads to the belief that the sun's atmosphere has, on the contrary, an immense extent, and in that case two rays, issuing one from the edge, the other from the centre of the luminous disc, would traverse spaces nearly equal before reaching our eye. We should not, therefore, expect to observe any great difference between the spectrum obtained by means of one or the other of these rays. The idea thus thrown out by M. Brewster has never been experimentally verified.

The phenomenon of the lines remained therefore unexplained; nor would the mysterious reasons, doubtless, have ever been penetrated, had not physicists thought of studying other spectrums than that of

the solar light. Any flame may serve for this purpose. The spectrum of all sorts of artificial flames have been examined, as well as that of the electric spark, of the luminous arch produced by a current between two points of charcoal, even that of the more brilliant of the stars. Observers have it in their power to vary indefinitely the nature of artificial flames; nothing is easier than to place different substances in suspension in a flame, either directly by immersing them at the end of a wire of platina, or mixing them beforehand with the liquid which supports the combustion. The study of artificial flames has revealed a phenomenon at least as extraordinary as that of the dark lines of the spectrum. When certain substances are in a state of ignition in the flame, the spectrum is traversed by colored bands of a greater brightness which are vividly depicted on the general ground of the usual colors. This circumstance had not escaped Fraunhofer, who had seen with astonishment bright lines traced in the spectrum produced by the flame of a wax candle. Different physicists, Brewster, Miller, Schwann, submitted to analysis flames obtained by burning alcohol which contained various salts in solution, and they were thus enabled to observe the bright stripes of artificial spectrums with great distinctness. Thus it was ascertained that every flame containing sodium furnishes a spectrum in which a yellow line of an extraordinary brightness is delineated. Schwann even observed that it was sufficient to mix a very small quantity of sea salt, or chloride of sodium, with the combustible liquid, in order that the spectrum should disclose its presence by the appearance of the yellow line.

In this discovery there was the germ of a new method of chemical analysis. Each metal in effect has bright lines of special colors, which correspond with it, and which retain an invariable position in the spectrum. A chemist may learn to distinguish these lines as readily as he recognizes the precipitates obtained in the laboratory by the ordinary reagents; but with the advantage that the light furnishes a reaction far more delicate and perfect than any with which chemistry was before acquainted. Arago, who accomplished so much in behalf of optics, predicted that chemistry would some day derive unexpected services from the progress of that science. A ray of light proceeding from a flame discovers by its physical properties the intimate nature of the focus from which it emanates. I shall cite an example, borrowed from M. Kirchhoff, well calculated to excite surprise: "The following experiment," writes the learned physicist, "proves that thus far chemistry has no reagents which can be placed even in remote comparison with that of the spectrum as regards its sensibility. We have caused three milligrams of chlorate of soda to detonate in a part of the hall as far removed as possible from the apparatus, while we observed the spectrum of the flame of a gas-lamp giving but slight illumination; the apartment in which the experiment was made measures about sixty cubic metres. After some minutes the flame, reflected in a tawny yellow hue, presented with great intensity the characteristic line of sodium, and this line was not completely effaced till after the lapse of ten minutes. From the capacity of the hall and the weight of the salt employed in the experi-

ment, we easily deduce that the air of the apartment held in suspension but one twenty-millionth of its weight of sodium. Admitting that a second suffices for conveniently observing the reaction, and that during this time the flame uses fifty cubic centimetres or 0.0647 grams of air, containing only the twenty-millionth of a milligram of salt of soda, we may calculate that the eye very distinctly perceives the presence of less than the three-millionth of a milligram of salt of soda. In view of such a sensibility as this, we recognize that it must be seldom, indeed, that atmospheric air, at a high temperature, does not present the reaction of sodium. The surface of the earth is more than two-thirds covered with a solution of chloride of sodium, which, by the agitation of the waves, continually produces spray; the minute drops of water thus diffused in the atmosphere abandon in evaporating a highly attenuated dust of chloride of sodium, which constitutes an atmospheric element, variable as regards the proportion, but rarely, it would seem, deficient in the air."

Nothing is easier than to produce this apparition of the yellow line of sodium in the spectrum obtained by the comparatively obscure flame of an ordinary gas-lamp. While my eye was applied to the glass with which I was observing the faint spectrum of such a lamp, M. Grandeau, the chemist, who kindly repeated for me at the laboratory of the normal school the experiments of MM. Bunsen and Kirchhoff, struck several times with his hand on the sleeve of his coat, and I saw the yellow line of the sodium display itself in a momentary flash on the dim field of the eye-glass. The stroke of a hand on a garment had sufficed to throw into the illuminating gas some of the molecules of sodium mixed with the dust, and these scanty molecules had instantly exerted their almost magic influence on the properties of the light. M. Grandeau, at the time when he initiated me in the experiments of the two German savants who had themselves given, at Heidelberg, an account of their extraordinary researches, was engaged in analyzing the mineral water of Bourbonne-les-Bains, and had just detected therein the two new metals which MM. Bunsen and Kirchhoff had discovered in the water of Dürkheim. He took some drops of the water of Bourbonne, introduced them into the flame, where they were at once converted into vapor, and I had quite enough time to distinguish on the field of the spectrum the lines which characterize the new metals, *rubidium* and *cæsium*, the red line of the first and the blue of the second.

It was, in fact, solely through the inspection of different spectrums, which they obtained by introducing divers substances into a flame, that MM. Bunsen and Kirchhoff were led to the discovery of these two new simple bodies. Familiar with the bright lines characteristic of all the known metals, they were warranted in attributing to new metals the bright lines which corresponded neither with iron, nor sodium, nor lithium, nor potassium, &c. Guided by this induction, they were enabled to seek directly for these metals in substances which called forth in the spectrum the appearance of the new lines. Hence it was that they extracted *cæsium* from the mineral water of Dürkheim, and *rubidium* from a mineral of Roxena, in Moravia, called by mineralo-

gists *lepidolite*. These two metals are highly alkaline, and take their place in the chemical series by the side of potassium and sodium, of which they partake the principal properties.

The optical analysis, by reason of its extreme delicacy, furnishes the means of recognizing the slightest traces of the metals which possess the property of communicating a vivid coloring to certain zones of the spectrum. To give a striking instance: when the ashes of a cigar, a little moistened with chlorhydric acid, are introduced into the flame which furnishes the spectrum, we see appear the yellow line of sodium, the pale red line of potassium, the intensely red line of lithium, a very deep orange line and a green one, both corresponding with calcium; thus in an instant we have verified the presence of five metals. By the same means we discover in mineral waters, especially when the experiment is made with mother-waters, (*eaux-mères*,) the least traces of the numerous metals which communicate to them these peculiar medicinal properties. The metals are not in general characterized by a single band; that is the case only with sodium, whose yellow band is distinguished by very vivid outlines and a peculiar brilliancy. It is true that we can scarcely introduce any substance whatever into the flame without the appearance of this line, even when that substance does not contain sodium; it is sufficient that such body should have been subjected for some time to the action of the air in order that it should give the reaction of sodium when presented to the flame. We have seen that the dust detached from clothes at some distance from the apparatus suffices to produce this effect. The wire of platina, with which many substances are suspended in the flame, also reveals the presence of sodium when the wire has remained some time exposed to the air.

After the reaction of sodium, the most sensible and distinct is that of lithium; this metal gives rise to two lines well defined, the one a very pale yellow, the other red and brilliant. This reaction is of a delicacy almost as great as even that of sodium. MM. Bunsen and Kirchhoff have seen the red ray appear after the detonation, at some distance from the apparatus, of nine milligrams of carbonate of lithium. They compute that their eye has thus been able to detect the presence of nine-millionths of the carbonate of lithium in the air. They have discovered lithium in a multitude of substances where its presence was not suspected, in sea-water, in the fucus drifted by the Gulf Stream on the coasts of Scotland, in the granites, in mineral springs, in the ashes of wood growing on granitic formations, in the ashes of tobacco and of the leaves and cuttings of the vine, in those of cereals grown on a granitic formation, &c. Potassium is recognized by two lines, one situated in the red, the other in the violet, at the two extremities of the spectrum, and by a third intermediate line much more faint. The remoteness of the two principal lines, placed at the two ends of the visible spectrum, render this reaction but little sensible; the eye can only distinguish about one-millionth of a milligram of chlorate of potash in a flame.

The alkaline metals have more simple spectrums than the metals which enter into the composition of the alkaline earths. Strontium

gives eight remarkable lines, six red, one orange, and one blue, and the eye is able, by means of the spectrum, to perceive even six-millionths of a milligram of this metal in the air. Calcium, a metal which combines with oxygen to form lime, gives three lines, green, red, and blue, which appear only in intense flames. Barium, the metal of baryta, is distinguished by two green lines. Iron, which produces very numerous lines, manganese, zinc, copper, gold, all the metals, in a word, have been tried by MM. Bunsen and Kirchhoff, and they have carefully studied the lines which each of them exhibits in the spectrum. These bright zones remain invariable, whatever may be the composition of the salt, in which the metal is contained; they are still the same when the metal is directly volatilized in the flame or in passing a strong electric current between two metallic points placed at some distance from one another. The optical properties which we have thus indicated are, therefore, attributes of the simple bodies themselves, and they may be observed at all times when these latter are raised to a high temperature.

This curious investigation of the bright lines of the artificial spectrum has an intimate and close connexion with the explanation of the dark lines of the solar spectrum. This connexion, however, it is not easy to discover at the first glance, and it even escaped so ingenious a physicist as M. Foucault. In 1849 M. Foucault announced that he had observed the following fact: when we are examining in a spectrum the yellow line of sodium, from being bright it becomes dark if we vividly illuminate the source of artificial light in which the sodium is in suspension. M. Foucault was observing the voltaic arch which unites two points of carbon, and he saw a bright yellow line produced on the spectrum, due to the presence of a compound of sodium reduced to incandescent vapor by the action of the current. Now, when the luminous voltaic arch was traversed by the rays of the solar light that line became dark.

This strange phenomenon was neither explained nor generalized by the French physicist. M. Kirchhoff was ignorant of it when, in 1859, he commenced with M. Bunsen his series of fruitful experiments. He showed that the bright line of sodium occupies in the series of elementary colors the place which, in the common solar spectrum, is occupied by the black line which Fraunhofer designated as the line D. To borrow his own expressions, the line D is only the bright line of sodium *reversed*, (it would surely be better to say extinguished.) But how is this line to be extinguished in a flame which holds sodium in suspension? We have seen that it is by directing upon this flame the rays of a flame still more vivid. If we observe the spectrum of the sodium flame, we shall perceive at first the characteristic yellow line; let us then allow the solar light to penetrate with increasing intensity into this flame, and the yellow line will grow pale by degrees, and at length will become dark when the spectrum produced by the sun shall have overpowered that of the artificial flame. What occurs with sodium occurs with all the metals. M. Kirchhoff has converted the red line of lithium into the dark line just as he had done the yellow line of sodium; the other metals likewise present, though with

less distinctness, the phenomenon of reversal. What is proved by these phenomena? It is, that of all the rays of natural light which traverse the artificial flame there are absorbed in greater abundance, the rays which this flame would emit were it alone shining; or, to speak more scientifically, the flame has an absorptive power correspondent to its emissive power.

Let us now represent to ourselves the sun consisting of a nucleus, the focus of an incessant and intense light, and surrounded by an atmosphere. This envelope, which is of a temperature less elevated than the central nucleus, will absorb in preference the rays similar to those which it would give out in greatest number if, supposing the globe of the sun removed, the atmosphere remained as sole focus of light and of heat. Here the solar atmosphere fulfils the part which the pale artificial flame did in the experiments of M. Bunsen, and the solar globe that of the more vivid flame which *reverses* the bright lines of the artificial flame. The solar atmosphere, isolated from that which it envelopes, would furnish a spectrum, crossed with bright lines, corresponding to all the substances which it might contain in ignition. The intense light of the nucleus of the sun extinguishes all these lines, and, in place of this imaginary spectrum of dark ground covered with colored lines, it gives a spectrum of a bright ground covered with dark lines. The spectrum of the sun is in some sort the negative proof of the spectrum of its atmosphere; we find a dark line in the place which corresponds to the bright line of sodium. We may affirm, then, that this bright line would be found in the spectrum of the solar atmosphere; or, in other terms, that sodium in ignition is present in that envelope.

The sun reverses all the bright lines which its own envelope would furnish; or, in other words, each of the dark lines of the spectrum reveals *negatively* the presence of a particular simple body in the atmosphere of the central star. Now we count, in fact, thousands of dark lines in the spectrum. How rich, then, in simple bodies must be the orb which dispenses to us light and heat! Many of these lines occupy the places which correspond to known terrestrial metals; we may say, without hesitation, that the line D pertains to sodium, another to lithium; here we see sixty black lines all coinciding with the bright ones of iron, there the lines of calcium, of magnesium, of sodium, metals so widely diffused over the surface of the earth; we retrace the brilliant groups of chrome as black lines in the solar spectrum. It was highly interesting to search there for nickel and cobalt, which are almost constant accompaniments of iron in meteorites. These two metals produce a very considerable number of colored lines, less bright than those of iron. All the most vivid lines of nickel are found reversed; that is, black, in the spectrum of the solar light. We distinguish also a few of the lines of cobalt; but, strange to say, not the brightest of those lines. Barium, copper, and zinc appear to exist in small quantity in the solar atmosphere; on the other hand, there has no distinct trace been discovered of gold, silver, mercury, aluminium, silicium, which is so abundant among telluric metals, cadmium, tin, lead, antimony, arsenic, strontian, and lithium.

The discoveries of MM. Bunsen and Kirchoff no longer permit us

to doubt that the sun has an atmosphere of a temperature lower than that of the luminous nucleus, properly so called, and which holds in suspension the greater part of the simple bodies which we find on our planet. This grand conception accords well with the hypothesis of Laplace, who attributed the formation of all our planetary system to the gradual cooling of a single nebula, in which the cosmic matter at present condensed in the sun, the planets and the satellites, was primitively diffused through the entire space which that system occupies. The smallest bodies naturally cool most rapidly; the moon appears frozen, without atmosphere, without water, without organic life; there is something mournful and appalling in its aspect under the telescope. The earth has cooled less promptly than its satellite, but far more rapidly than the sun, whose fervid atmosphere still contains the numerous substances which on our planet have been long since condensed and fixed in the solid rocks. Our impoverished atmosphere contains nothing but the elements necessary for the support of organic life, oxygen, azote, carbon, and water, and our understanding can with difficulty accustom itself to the idea of an atmosphere charged with iron, with alkaline metals, with bodies the most different in a state of combustion. It would require the pen of Dante to portray that chaotic condition of nature, that rain of metallic fire, those luminous clouds darkened by the contrast of a still intenser light, that incandescent ocean of the sun, with its tempests, its currents, its rushing and gigantic water-spouts; such pictures set at defiance even imaginations the most enamored of the fantastic and the strange, and our dreams evaporate as a drop of water before that blazing lava, that focus, that refulgence of the world, source of all warmth, of all movement, of all life.

On such a subject nothing can be more eloquent than the precise language of science; it derives its force from its very humility. If metallic vapors surround the sun in the form of an atmosphere, we comprehend that they may be condensed in clouds, like the vapor of water in our own atmosphere. Galileo regarded the spots of the sun as clouds floating before the lustrous body from which the light radiates; but this hypothesis has been generally abandoned by astronomers. In order to understand the theories which are at present adopted respecting the physical constitution of the sun, let us describe the appearance which it presents when examined under a high magnifying power.

The entire surface appears covered with innumerable small inequalities, similar to marbling, or rather to the rugosities of an orange. On the luminous ground are seen dark spots of a brownish grey or black color, and of very irregular forms. When these spots are observed for several days in succession we perceive that they make their appearance on the eastern border of the disc, advance towards the centre, pass it, and disappear behind the western border. Sometimes the same spots are seen to reappear after having made an entire circuit. It is this phenomenon, indeed, which has afforded the means of estimating the velocity of rotation of the sun. The spots of the sun have very distinct outlines; they usually exhibit

a black portion, nearly central, surrounded by a penumbra not so deeply shaded and sharply defined as regards the darkest zone. The penumbra is generally a little lighter around the central black spot. It is quite rare to witness a spot without penumbra or a penumbra without a spot.

When we observe a spot during several days, very curious changes are remarked in the outlines of the black portion and the penumbra. If the spots were adherent to the body of the sun itself and, as La Hire and Maupertuis still believed at the close of the last century, were species of isles or scums in the solar ocean, we should naturally see first one part of the penumbra vanish, then the black central nucleus, then the other side of the penumbra. It is observed, on the contrary, that as the spot advances towards the western border of the solar disc, the western penumbra, instead of diminishing, increases in size, the eastern penumbra shrinks and is effaced; lastly, the black central nucleus itself disappears before the western penumbra. In reference to this observation, which is due to Wilson, and to give an explanation of it, William Herschel, in 1779, surmised that the sun has an envelope of a nature altogether peculiar. In the centre he supposed there might be a solid and opaque nucleus, surrounded on all sides by a gaseous and transparent atmosphere, as in the case of the terrestrial atmosphere; this might be composed of two strata: an exterior luminous one, the true photosphere of the sun; and a lower stratum, obscure or feebly illuminated by reflection. How, by this hypothesis, are we to explain the phases of the solar spots? Imagine that a hurricane, rends the atmosphere over an immense expanse, (there are spots whose extent is not less than the whole surface of the earth;) at the bottom of the gulf thus formed, the terrestrial observer will perceive the solid nucleus of the sun as a dark spot, and the first atmosphere, slightly transparent and faintly illuminated, as a penumbra encircling the central spot. It will thus be easily comprehended that the movement of rotation of the sun will, by presenting the object obliquely, withdraw from our view one of the sides and the bottom of this vast chasm before withdrawing the opposite side. All the phenomena described by Wilson are thus very easily accounted for. But by the influence of what forces is it that the luminous veil of the sun and the second semi-diaphanous veil are torn apart to show us the opaque nucleus? This no one has been able to explain. Herschel supposed that the solid nucleus was covered with volcanoes, whose vapors, discharged with great force, might break up through the solar atmosphere; but this is a supposition wholly gratuitous, which nothing has seemed to confirm.*

A discovery made by Arago, in 1811, seemed to give a new degree of probability to the strange hypothesis of Herschel on the constitution of the sun. It had been long believed that the light emitted by incandescent bodies was not polarized; Arago observed, on the contrary, that the light proceeding from an incandescent body, solid

* Phenomena lately observed indicate that the nucleus of the sun, as well as its atmosphere, is subjected to violent commotions. J. H.

or liquid, always presents traces of polarization. The flame of a gas in combustion alone presents the properties of normal light. This observation furnished a very simple means of discovering the physical constitution of the sun. If it were composed of an incandescent liquid mass it ought to transmit polarized light. If the photosphere were gaseous, the contrary ought to take place. Now, in regarding the sun with a polariscope, Arago found no indication of polarization; thence he concluded that the luminous part of the sun is gaseous, and not liquid or solid.

The two atmospheric envelopes, which, as Herschel and Arago agree in admitting, exist around an opaque central sun, possess a probable thickness of about 4,000 kilometres; but the singular phenomena observed during the total eclipse of the sun of the 8th of July, 1842, obliged astronomers to recognize the existence of still a third solar atmosphere above the photosphere properly so called. These phenomena were perceived anew during the eclipse of the year 1860. At the moment when the moon has entirely covered the luminous solar disc, the lunar screen is surrounded by a brilliant luminous aureola, to which has been given the name of *corona*; from the border of the moon are projected elevations or protuberances, which observers compare sometimes to serrated rose-colored mountains, sometimes to masses of ice tinted red, sometimes to immovable red flames. These protuberances are of a height which may reach to 80,000 kilometers, a distance which surpasses even the diameter of the sun. The old theory of Herschel can render no account of these strange appearances. If the sun had the photosphere for its exterior envelope, the sky ought to be completely obscure at the moment when the lunar disc entirely covers the luminous body. We have been compelled, therefore, to admit that there exists a third atmosphere, of considerable transparency and vast extent, which encompasses the photosphere itself.

It was impossible that M. Kirchoff, in the sequel of the admirable discoveries which he had made with M. Bunsen, should not think of reforming the astronomical doctrines relating to the central star of our planetary system. He has arrived at the conclusion that the visible disc of the sun is not formed by a photosphere; he does not believe in the two envelopes of Herschel and in the opaque central nucleus; he regards the sun as an incandescent body of which the outlines are those of the luminous globe itself, which our eye perceives, and which is surrounded by an immense atmosphere rich in substances of the greatest diversity. The old theory was entirely founded on the appearances of the spots. M. Kirchoff considers them as clouds floating in the solar atmosphere; he admits that these clouds may be formed at different heights, as occurs in our own atmosphere. Two superposed clouds, of unequal extent, appear to us far off as a dark spot encompassed by a penumbra. It cannot be denied that in placing at the centre of the sun an opaque nucleus, and in giving it, for a first atmosphere, a zone half obscure, we present to the understanding an hypothesis which strongly contravenes the instinctive inductions of good sense. If the photosphere is the focus of solar heat and light,

it is hard to comprehend why all the substances it contains have not been gradually raised, however feeble the conductivity, to the temperature of incandescence. One may keep for a time a piece of ice in a warm chamber, but it always ends by melting. Suppose the nucleus of the sun as cold as you please, sufficiently cold to be inhabitable by beings like ourselves, the radiation of that furnace which we call the photosphere must gradually elevate the temperature of the first atmosphere and that of the solid globe itself. I think, therefore, that M. Kirchhoff has reason to reject a theory which is opposed to all the known laws of the diffusion of heat.

There still remains, however, the celebrated observation of Arago. If, as M. Kirchhoff contends, the luminous disc is not a gaseous photosphere, how is it that it transmits to us unpolarized light? On this point, the German savant remarks that if liquid luminous bodies emit polarized light, it is because we observe them when at rest; if we examined them when agitated, he thinks that the light being then emitted under the most different angles there would be no uniformity in the direction of the vibratory movements, consequently no polarization. He conceives, therefore, that the visible surface of the sun may very well be liquid and yet emit unpolarized or natural light, because that vast ocean of fire has not a smooth surface like a mirror, but is unceasingly furrowed by enormous waves and swept by tremendous tempests. To form such suppositions is not to yield to the sway of the imagination. All movement of air or water results from a simple difference of temperature: some degrees less from the pole to the equator on our earth, and we see the ocean traversed by currents and counter-currents, the atmosphere open to the winds, agitated by tempests; but the fluctuations of temperature, so comparatively slight on our planet, must, if we reflect, be immense in the sun and around the sun. The condensation of the metallic vapors of the atmosphere, the vaporization from the solar ocean, are phenomena far otherwise stupendous than our terrestrial thunder-storms. What force must the winds have on a sphere so vast as that of the sun! What fearful deluges must pour from the bosom of clouds as extensive as our widest continents and charged with metals in ignition! The variations of temperature in the solar atmosphere may be estimated, with great chances of probability, at many hundreds of degrees; the atmospheric pressure must vary in the same proportions, while it is by millimetres only that, in terrestrial barometers, we compute the variations of pressure in the mercurial column which forms the equilibrium to the weight of the atmosphere. And yet, we know a rapid fall of some millimetres in the barometric column is the certain forerunner of a violent tempest.

After having described the sun as an incandescent liquid globe, encompassed with a dense atmosphere pervaded by simple bodies, which we find in our own planet, M. Kirchhoff stops. He seeks not to explain how this focus of heat has been kindled, nor how it is maintained. This question, if it cannot be completely resolved, deserves, at least, to be discussed. If the sun were only a heated body radiating in space, like a red-hot cannon ball, we must conclude that

it could not long remain so bright as it appears to us and as it appeared to our most remote ancestors. The heat which it loses by radiation is truly enormous. M. Pouillet has calculated that during each second it gives out 13,300 calories, that is to say, 13,300 times the quantity of heat necessary to raise one gram of water from zero to 75 degrees C. Would we have an idea more easily appreciable of that quantity of heat? Employed to exert a mechanical effect, it would be sufficient to raise a weight of 5,600,000 kilograms to an altitude of one metre.

This expenditure of heat is so enormous that the surface of the sun would, without doubt, soon become obscure if the process went on without variation, and nothing returned to the sun the heat which it is constantly losing. Now, whence is derived this heat thus continually renewed? Can we imagine that it results from a chemical combination, from the combustion of different substances? If the sun were a mass of incandescent charcoal, it has been computed that 1,200 kilograms of that body would be consumed every hour for each square metre. If the central orb was of the same composition as our gunpowder, during each minute a layer of powder one metre in thickness would be burnt, and our present sun would disappear in nine thousand years. On the same hypothesis the solar diameter would eight thousand years ago have been double what it is to-day. I present these singular suppositions only to make it apparent that the phenomenon of the solar heat perpetually maintained cannot be compared with the phenomena of combustion, with which our experience is most familiar. We must prepare our minds for something extraordinary when the question relates to that immense focus whose activity seems never to slacken. Everything leads us to believe that the sun does not consume itself alone, but that it receives incessantly from without, new materials, which are precipitated into its orbit and there become incandescent. Let us suppose that the sun is encompassed by an immense cosmic ring formed of a multitude of meteorites. Attracted by the powerful mass of the sun, these meteors will describe spirals more and more closely approaching the centre with a velocity always increasing. Arrived in the solar atmosphere, they will fall upon the sun with the prodigious velocity which gravitation will communicate to them, a gravitation which at the surface of the sun is twenty-eight times greater than at the surface of the earth. The swiftness of a meteor arriving at the sun exceeds 600 kilometres a second; supposing that it has entered the solar atmosphere with the frozen temperature of the interplanetary spaces, we see that it must there promptly be raised to temperatures higher than we can imagine. M. Thomson, a learned Englishman, at once a mathematician and physicist, has calculated that to maintain the actual solar heat it would suffice that there should fall every year into the solar focus a quantity of meteoric matter which would cover the surface of the sun to the thickness of nine metres. Suppose, if you will, that twice as much is necessary, that every year the level of the solar seas is raised eighteen metres by virtue of this continual rain of incandescent meteors, it would require four thousand years in order that the apparent diameter

of the sun should be increased by one second—forty thousand years that it should be enlarged by one minute. At this rate, at the end of two thousand years a terrestrial observer who should have lived all that time would not see the sun differ more from itself than we see it differ every year from season to season, in proportion as the earth approaches or recedes from it. If the mass of the sun were augmented by the addition of meteoric substances, we should not be in a position to perceive it, while, in return, the constancy of the sun's diameter affords no argument for rejecting this hypothesis, which has the advantage of assigning a rational cause for the development of the solar heat.

It will be asked, perhaps, whence come those meteors whose fiery torrent falls incessantly on the surface of the orb which lights us. Have you never seen, on a clear evening of March or September, at the time of the equinoxes, a whitish gleam in the western part of the heavens? It occupies from twenty to thirty degrees in extent and projects itself above the horizon, following nearly the direction of the ecliptic. This has been called the zodiacal light, because those who first observed it conceived it to be limited to the zodiac. Under the hazy sky of our climates this pale glimmering is perceived but rarely after the evening twilight or before the rising of the sun at the beginning of spring or autumn, and it is easily confounded with the gleams of the receding or approaching day; but under the tropics the phenomenon displays itself in all its magnificence. On the summits of the Cordilleras, in the prairies of Mexico, under the transparent skies of Cumana, upon the coasts of the Sea of the South, the zodiacal light appeared to Alexander von Humboldt more lustrous than the milky way. At the equinox, at the moment when the solar disc sinks beneath the horizon, total obscurity succeeds almost immediately to day; and at once the zodiacal light is seen stretching up to half the height of the heavens and only vanishing at the approach of midnight.

Domenico Cassini, in 1683, was the first who observed the zodiacal light, and he considered it as a sort of luminous ring connected with the solar equator; he recognized in effect that this light follows the solar equator in proportion as the latter withdraws itself from the ecliptic. Thomson thinks that this vast luminous ring is the reservoir of the meteors by which the central sun is maintained. Such a theory adapts itself readily to the great cosmogonic conception of Laplace: The zodiacal ring extended between the sun and the orbit of the earth would, under that view, be a residue of the cosmic matter which, in the beginning, composed the entire nebula from whence emerged by degrees our complex system of planets.

However this may be, in proportion as astronomy studies with more care the phenomena of the heavens, does it meet there with more surprising marvels. What admirable discoveries have been recently made in our own solar system which had been supposed to be entirely explored! Among these discoveries, that of MM. Kirchoff and Bunsen must be regarded as one of the most important. The spectral analysis of the solar atmosphere has furnished the proof of the chemi-

cal unity of our planetary system, and perhaps it will some day reveal, when applied to the brighter stars, a physical relationship between our own system and all those which fill the immeasurable depths of space; but if it opens to us in some degree the portals of the infinitely vast, it reconducts us by another route to the idea of unity in nature. In studying the spectrum we at present recognize each simple body held in suspension in the flame whose rays are decomposed by the glass-prism; but what is a simple body which betrays its presence, not by one bright stripe alone, but by two, three, sometimes by sixty stripes? In proportion as the spectrum increases in distinctness, the number of luminous stripes increases for each substance; shall we ever see them all? It may well be doubted. Here, then, there is a multiplicity and indeterminateness which accord but ill, it must be confessed, with the theoretic idea which we entertain of a *simple* body, a substance not compounded, always identical with itself, the *substratum* of all chemical combinations. Must we admit, with some resolute spirits, that the bodies which we call simple, appear so to us only because thus far we have not succeeded in decomposing them? Should we conclude that the different simple bodies, if there are really such, are but formed of one and the same matter in different states of condensation? We thus find ourselves attracted towards the idea of unity of substance. Gas, liquids, solids, vacuum and plenum, bodies and celestial spaces, satellites, planets, suns, &c., would be but transitory forms of something eternal, the ephemeral images of something which cannot change; in the vortex of phenomena, in the eternal movement of all substance, the cosmic history everywhere shows us the future in the present and the present in the future.*

* All the facts in regard to solar chemistry can be briefly stated as follows:

1. Solid and liquid bodies when highly heated give a continuous spectrum without lines.
2. Flame in which solid or liquid substances are volatilized give a spectrum crossed with bright lines.
3. Each substance in the flame gives a line or a series of lines peculiar to itself, so that the presence of any substance in a flame may be known by inspecting the spectrum of the flame. Hence the value of the spectrum in chemical analysis.
4. When a bright beam of light from a solid or liquid behind a flame that is producing bright lines is sent through this flame, the bright lines disappear and dark lines take their place. These dark lines are called the reverse or negative lines of the substance in the flame.
5. The spectrum from the sun is crossed with a large number of dark lines, many of which are found to exactly coincide in position and magnitude with the negative lines produced by various metals found on the earth.
6. The complex system of negative lines of iron, for example, is found in the spectrum of the sun, and hence it is inferred from strict analogy that this and other metals exist in a volatile state in the atmosphere of the sun.
7. The constitution of the sun to produce this result must be that of a solid or liquid nucleus emitting light of great intensity, and surrounded by an atmosphere also emitting light, but of less intensity.
8. The dark lines of the spectrums of the planets are the same as those of the sun. This is what might be expected, since they shine by reflected sun light; but the lines of the fixed stars, of Sirius, for example, are different from those of the sun.
9. The inferences drawn from the facts above stated have not been fully accepted as yet by scientists of celebrity. Since the lines in the spectrum of the sun are very numerous, there is a possibility that those which are found to indicate iron, for example, may be an accidental agreement. But Kirchoff has calculated the chances of an accidental agreement, and finds it to be one divided by one million of millions of millions.

SECRETARY, S. I.

PROGRESS OF ASTRONOMICAL PHOTOGRAPHY.

FROM THE MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, FEBRUARY 14,
1862. No. 4.

ADDRESS DELIVERED BY THE PRESIDENT, DR. LEE, ON PRESENTING THE GOLD
MEDAL OF THE SOCIETY TO MR. WARREN DE LA RUE.

GENTLEMEN : In the report which has been read to you, you have been informed that the council have assigned the gold medal of the society to our worthy secretary, Mr. Warren De La Rue ; and, as it is the custom, it becomes now my duty to explain to you, in a few words, the grounds of their decision.

You know that for many years Mr. De La Rue has devoted the energies of his mind, a large expenditure, and such leisure as he could abstract from the complicated cares of an extensive and well-known commercial concern, to the earnest cultivation and systematic pursuit of practical astronomy, and that he has been one of the most frequent contributors to our evening meetings, upon a variety of subjects—all requiring much knowledge, skill, and labor in their treatment.

Discoveries in the regions of science so crowd upon us in our own times, that valuable inventions and striking results soon fade from the memory, and are lost in the brilliancy of those which rapidly succeed them.

I must therefore request your indulgence whilst I lay before you what it is that Mr. De La Rue has done to entitle him to receive, and which justifies the council in awarding him the highest honor that it is in the power of the Royal Astronomical Society to bestow.

Mr. De La Rue has not only conducted the usual observations which are made at most private observatories, but he has directed the resources of a rare mechanical genius to improvements in the most approved methods of polishing the specula of reflecting telescopes, and perfecting the mechanical arrangements by which operations of such refined nicety are performed.

On this subject there can be no higher authority than Sir John Herschel, who, in an article on the *telescope*, published in the *Encyclopædia Britannica*, says :

“Such is Mr. De La Rue’s mechanism, which has afforded very admirable results in the production of specula 13 inches in aperture and 10 feet focal length, the perfection of which is enhanced by his practice of bestowing the same care and precision on every step of figuring of the speculum, from the grinding, the smoothing on a bed of hones, or rather a slab of slate cut into squares, carefully brought to the same figure, and to the figuring of the polisher itself, which being thus previously rendered almost perfect, the speculum is saved

the rough work of having to figure the polisher for itself on every occasion of repolishing."

In a more private communication to myself on the same subject, Sir John adds that "Mr. De La Rue's machinery, though grounded on Mr. Lassell's rotary principle, is by no means a servile imitation of Mr. Lassell, inasmuch as several distinct improvements have been introduced tending to distribute the polishing action more equally over the whole surface of the metal. One of these improvements consists in his interposition of a plate between the supporting plate and sliding plate of Mr. Lassell's traversing slide, which, being made to revolve, causes the traversing movement of the speculum to take place, not across the same diameter of its area, but at every stroke across a different diameter; and he also obviates the irregularity of the motion of Mr. Lassell's polisher on its centre, by governing that rotation by mechanism, instead of leaving it to be determined by the excess of external over internal friction."

But it is in celestial photography that Mr. De La Rue has made his most important discoveries, and displayed an unfailing fertility of mechanical invention. Wisely acknowledging the growing vastness of the several departments of the same science, he has latterly, in a great measure, restricted his researches to the delineation of the various aspects of the heavenly bodies, through the medium of photography.

It is only by acknowledging and adopting the principle of the division of labor that great results can be obtained, either in the pursuits of commercial industry or abstract science.

The days of the admirable Crichton have long since passed away.

Indeed Lord Bacon himself, in the *Novum Organum*, well observes, in anticipation of the influence of this general principle:

"Then men shall begin to find out their own powers when all will not essay to do the same things, but each man will employ himself in the work for which he is most apt." *

Mr. De La Rue's claim to the special notice of astronomers, as a delineator of celestial objects through the medium of photography, does not rest on the absolute priority of his application of a well-known art in a new direction. It is rather based on the fact that by methods and adaptations peculiarly his own, he has been the first to obtain automatic pictures of the sun and moon, sufficiently delicate in their detail to advance our knowledge regarding the physical characters of those bodies, and admitting of measurements astronomically precise.

The late Mr. Bond, of Cambridge, in the United States, in the year 1845, with the assistance of Messrs. Whipple and Bond, obtained good pictures of *α Lyræ* and of *Castor*; and that, in this year, Signor De Vico made an unsuccessful attempt to photograph the nebulae in *Orion*.

At about the same time, or a little later, the Rev. J. B. Reade took photographs of *α Lyræ* at my observatory at Hartwell, and at his own observatory at the Vicarage of Stone.

* "Tum enim homines, vires suas nosse incipient, cum non eadem infiniti, sed alia alii præstabunt"—*Liber 1, aphor. cxiii.*

Mr. Glaisher, writing in 1851, as reporter upon philosophical instruments in the great exhibition, Class X, and upon Mr. Bond's daguerreotype of the moon, taken in 1850, and which was placed in the exhibition of 1851, says upon photography: "Let us now view photography in its application to science: a process by which transient actions are rendered permanent, and which enables *nature* to do her own work—or, in other words, which causes facts permanently to record themselves—is too well fitted for the purpose of science to be long overlooked; but the difficulties to be overcome in its application have been and still are great, and the results proportionably few in number. We consider, however, that the commencement of a systematic application of the photographic process to the purposes of astronomy is indicated by the daguerreotype of the moon by Mr. Whipple; and great, indeed, will be the benefit conferred upon astronomical science when we obtain permanent representations of the celestial bodies and their relative positions through the agency of light."

Enlarged copies of Mr. Bond's photographs were laid before the Royal Astronomical Society in May of the same year. At the meeting of the British Association of Science, held at Ipswich in July, 1851, under the presidency of the learned astronomer royal, a daguerreotype of the moon was shown to the members of the mathematical section by Mr. Bond; and his royal highness the Prince Consort, whose loss we now deeply deplore, was present on the occasion and inspected the daguerreotype.

On the subject of the connexion of photography and chemistry with astronomy some interesting remarks appear in the admirable lecture on the sun, delivered by the respected Professor Walker before the British Association of Science, under the presidency of our esteemed member Lord Wrottesley, in 1860, at Oxford.

There are several references to celestial photography in the various volumes of the *Comtes Rendus*, which can only be brought to your notice in the form of notes.*

It was the sight of these very promising daguerreotypes of Mr. Bond which, in 1851, first gave the impulse to Mr. De La Rue's labors in this direction. In 1852 he availed himself of the collodion process invented by Mr. Archer in the preceding year, and succeeded in obtaining a good picture of the moon. In 1853 Professor Phillips obtained talbotypes of the moon at York. In 1854 lunar photographs were secured at Liverpool under the supervision of our respected

*1849.—Vol. xxxviii, p. 241. "On the Observations of the Sun." By M. Faye.

1858.—Vol. xlv, p. 705 and following pages. "On the Photographs of the Eclipse of March 15, by MM. Porro and Quinet." By M. Faye.

1859.—Vol. xlviii, p. 174. "Report on a Memoir addressed by M. Liais on the occasion of the Total Eclipse of 1858, September 7."

1859.—Vol. xlix. "Second Memoir on the coming Eclipse of 18 July."

1860.—Vol. li, p. 965. "On the State of Astronomical Photography in France."

1861.—Vol. liii, p. 997. "On the Perfecting Meridional Observations of the Sun without an Observer." By M. Faye.

1862.—Vol. liv, pp. 43 to 159. "On Photographs of the Sun, taken by M. Belfort during the Eclipse of the 31st of December last."

member Mr. Hartnup. In 1855 the Rev. J. B. Reade, who has distinguished himself by his discoveries in photography, obtained special notice and honorable mention at the Paris exhibition for his photograph of the moon. Others also have been taken at Rome by Signor Padre Secchi, at Brighton by Mr. Fry, and in the vicinity of London by Mr. Huggins. All these photographs possess merits of their own, and give decided promise of future and greater success.

Admiral Smyth, in the *Speculum Hartwellianum*, pp. 249, 250, and 285, speaks of Mr. Bond's labor in celestial photography, particularly pointing out that in 1857 a photograph was sent to the astronomer royal taking in the whole field between *Mizar* and *Alcor*, with such exactitude as to show their angles of positions and distances.

Mr. De La Rue's success in obtaining photographic pictures of the moon possessing great sharpness of definition and accuracy of detail is owing to the happy combination of a variety of causes. Possessing a large mirror of such exquisite defining power that but few existing telescopes equal it in accuracy of definition, and brought into figure by *his own hands*, and by peculiar machinery of *his own contrivance*, he was at once freed from those imperfections in the actinic image which are of necessity inherent in the very best refractors, even when corrected most accurately for chromatic dispersion.

Mr. De La Rue at first had no clock-work apparatus to govern the motion of his telescope, and, after making several successful lunar photographs with the aid of the hand-gear of the telescope, he discontinued his selenographical experiments until he had removed from Canonbury to Cranford—a change of residence which, for the interests of astronomy, he had for some time previously in contemplation. He then furnished his telescope—his own in a double sense—with a clock-work apparatus, which from time to time has passed through numerous alterations, and which is still in course of improvement. The mechanical problem before him, as the fellows of this society well know, was one of extreme complexity; for not only must the motion of the clock-work be perfectly smooth and equable, but it must also be capable of acceleration and retardation, to keep pace, so to speak, with the ever-varying velocity of the moon in the heavens—a variation compounded of its diurnal motion and its ever-changing velocity in its orbit.

Lastly, by a rare and happy combination of chemical with mechanical skill, the time necessary for the exposure of the collodion film was materially shortened. The final result is this, that images of the moon have been repeatedly taken in the focus of the mirror, admitting of very considerable amplification, and exhibiting details on the moon's surface sufficiently clear to admit of delineation under a microscope provided with a camera lucida, and thereby furnishing materials for a more accurate selenography than has heretofore existed.

Neither must we altogether omit that by stereoscopically combining images of the moon, taken in different phases of her librations, more particularly enlarged copies, eight inches in diameter, Mr. De La Rue has brought to light details of dykes, and terraces, and furrows, and undulations on the lunar surface, of which no certain knowledge had

previously existed, and which I have had the exquisite pleasure of beholding in his observatory at Cranford.

“ Man looks aloft, and, with erected eyes,
Beholds his own hereditary skies.”

I must now turn to a department in celestial photography, where Mr. De La Rue stands almost alone. I speak of *heliography*. In April, 1854, Sir John Herschel, in a letter to Colonel Sabine, recommended that daily photographic records of the sun should be obtained at some observatory. Accordingly the Royal Society placed at the disposal of the Kew committee a sum of money to promote that object, and Mr. De La Rue was requested to administer the grant.

It becomes necessary to mention that Arago, in his elegant and popular work on astronomy, translated by two eminent fellows of our society, states that MM. Fizeau and Foucault, in 1845, obtained a photographic image of the sun, and two spots on its disk, delineated with much apparent sharpness and accuracy; but, however this may be,* it is certain that no uniformly successful method of taking images of the sun had been devised until Mr. De La Rue took up the problem for investigation.

Yet great as had been the difficulties in obtaining a really accurate and available picture of the moon they sink into insignificance when compared with those which had to be overcome in the photography of the sun; for to obtain any automatic pictures of the sun's photosphere available for practical purposes it was found necessary to institute a series of preliminary experiments before actual operations could be successfully commenced. At first nothing but burnt up and solarized pictures could be obtained by any method that had hitherto been devised, or with any the least sensitive of the media that could be procured. Now, with the help of the Kew photoheliograph, as devised by him, and described in vol. xv of the *Monthly Notices*, *heliography* is the easiest and simplest kind of astronomical photography. The method devised by Mr. De La Rue will enable any photographer of common average skill to take excellent heliographs. Professor Selwyn, of Cambridge, succeeds in getting good pictures of the sun with the apparatus made for him by Mr. Dalmeyer, after the pattern of the Kew photoheliograph.

Mr. De La Rue announced at the last meeting of the society that by applying the stereoscope to the examination of the sun's disk, as he had formerly done in the case of the moon, he had discovered that the faculæ on the surface of the sun are to be found in the outer or highest regions of the solar photosphere.

I ought not to conclude without alluding to Mr. De La Rue's observations on the solar eclipse of 1860; but it must not be forgotten that *one* daguerreotype picture was taken by Dr. Busch of the solar

* Respecting this photography of the sun, the index of the *Comptes Rendus* has been searched all through, under the heads of *Arago*, *Photography*, *Soleil*, *Fizeau*, *Foucault*, *Daguerreotype*, and *Faye*, and no mention has been found whatever of the sun's picture in 1845; and there has not been found any reference to it, excepting the plate in the body of the original work itself.

eclipse in 1851, and of the solar eclipse in 1860 *four* small pictures were also taken during the totality by Professor Monserrat, under the direction of MM. Aguilar and Secchi, at Desierto de las Palmas, in Spain.

Mr. De La Rue, during the progress of the same eclipse, took many large and exquisitely defined pictures, and secured two during the totality. I have no need to enter into details, as he has already described at several meetings of this society the numerical results that follow from the discussion, and the comparisons of the photographs which he took on that occasion. A paper giving the result of his labors during the expedition to Rivabellosa has been presented to the Royal Society, and is to be considered in March of this year.

Mr. De La Rue has invented an ingenious micrometer, lately exhibited at one of our meetings, by means of which he fully confirms the hypothesis that the colored protuberances belong to the sun, and renders it almost certain that the commonly received diameters both of the sun and moon require a correction.

More recently still, photographic pictures of the sun have been obtained by Mr. De La Rue, not only exhibiting its well-known mottled appearance, but showing traces of Mr. Nasmyth's "willow leaves," and by the aid of stereoscopic pictures rendering it certain that the faculæ are elevations in the sun's photosphere.

I need not enlarge on the wonderful discoveries which have been made and the astonishing results that have been obtained by Newton and his successors in this the most fertile and exact of all the applied mathematical sciences. Neither would it become me, an humble but zealous worshipper of science, to hazard conjectures as to the *future progress of astronomy*. And yet I cannot refrain from expressing my belief that the success already achieved by our friend warrants us in entertaining the hope that before long he will be able, with the aid of stereoscopic pictures, to exhibit to us the rose-colored prominences depicted on the sensitive plates as plainly as the faculæ have already been photographed. The depths and the successive strata of those strange interlacing outliers within the solar spots may be brought into tangible view. The different planes of *Saturn's* rings* will also come into relief, the belts of *Jupiter* may be manifested as portions of his dark body, and ere long the mountains and elevated continents of *Mars* will rise up into solidity before our delighted gaze.

I may also, perhaps, be permitted to remark, that while our great national and public observatories—indeed, I ought to say those of the civilized world as well—are day by day adding to that enduring record of the transient phenomena of the heavens which will enable future

* If the subject of the present address were not now of necessity confined to improvements in celestial photography, I should here refer at some length to those exquisite and unequalled hand-drawings by Mr. De La Rue, of *Saturn*, *Jupiter*, *Mars*, and the comet of 1858, which have so often delighted and informed our society. They have embodied with micrometrical accuracy the results of years of scrupulous and skilful labor; and, as an instance of the reliable nature of the results obtained, I may mention that, by placing under the stereoscope two of Mr. De La Rue's hand-drawings of *Saturn*, taken at two distant periods, the inclinations of the planes of the rings alluded to in the text become unmistakably apparent.

ages to reach the final finish and last perfection in the calculation of the tables of the motions of the moon and the planets, to eliminate any element of error, however minute, and to detect any latent disturbing force, however feeble its effect; yet it is to *private observatories* and to observations made in the remoter regions of starry space that we are chiefly to look for new discoveries. It augurs well for the future that there is no lack in our own day of such establishments, or of accomplished observers to use them. It is almost, if not altogether, needless to bring before you the names of Admiral Smyth, or Lord Rosse, or Mr. Lassell, or Lord Wrottesley, or Mr. Dawes, or Mr. Carrington, and a host of others familiar to many of you. The elliptic motions of binary stars round their common centre of gravity, the colors of others, the discovery of new planets, the calculation of cometary orbits, the laws of change in the *variable* stars, the sudden burst upon the sight of some stars, and the gradual evanescence of others, will afford for many generations suitable and exhaustless subjects of sustained astronomical research. The instant splendor and gradual decay of certain stars is one of the most wonderful facts recorded in the history of astronomy. In 1572, Cornelius Gemma observed a star in the chair of *Cassiopeia*, transcending *Venus* herself in brightness. It was Hipparchus who first, I believe, noticed the sudden appearance of a star of singular brilliancy before unknown. By this strange discovery he was urged to construct a catalogue of stars visible to the naked eye, "that posterity might know whether time had altered the face of the heavens."

The art of photography is of the very highest importance in the promotion of exact science.

It stereotypes, so to speak, for the use of all time to come, the present aspect of the heavens.

As astronomical observations ranged in tables record the present positions of the heavenly bodies, so photography registers their present aspect. It may be that the pictures of the sun now taken will enable future ages to test the prediction of the poet,

"The stars shall fade away, the sun himself
Grow dim with age, and nature sink in years."

If, then, we take collective note of all Mr. De La Rue's long and varied labors since the 14th March, 1851, when he became one of our members—such as the perfecting of the figures of mirrors, the graphic observations of the planets, the incomparable photographs of the moon, the invention of the photoheliograph, the observations on the solar eclipse, the invention of the new method of obtaining numerical data, the application of the stereoscope to the examination of the surface of the *moon*, and afterwards to that of the *sun*—sure am I that the society at large will unanimously approve of the award of their medal made by the council.

It may, however, be said by some ingenious critic that photography is only an art which bears but indirectly on the promotion of astronomy, and that the reward of its successful manipulation is rather the province of those societies to confer which cultivate the art of pho-

tography, or the science of chemistry. But I cannot admit the justice of this view. What should we now say of the early fellows of the Royal Society, if they had relegated Newton, when he invented the telescope that bears his name, to the Company of Spectacle Makers for his meed of praise? What should we now think, had the barren honors which grace scientific discovery been denied to such mechanical inventors as Hadley, or Dollond, or Sir William Herschel, or Lord Rosse, or Lassell? With them the name of De La Rue, I feel, will hold no inferior place.

The President, then delivering the medal to Mr. De La Rue, addressed him in the following terms:

MR. DE LA RUE: In compliance with a resolution of the council, I have the pleasing duty of placing in your hands the highest tribute to merit which they have in their power to bestow. The instruments made or improved by you, the important uses to which you have applied them, and the liberality with which you have communicated the results of your discoveries to the public, all indicate, in the opinion of the council, a mind highly cultivated, whose energy has been directed, during many years, to the attainment of scientific perfection.

But your unceasing efforts and delicate manipulation in reducing the new and wonderful art of photography to astronomical purposes, and in rendering chemistry a handmaid to astronomy, supply the more immediate motive of their approbation.

May Divine Providence continue to bestow upon you health and intelligence, and every social blessing, enabling you still further to illustrate the glory of the Creator, and to promote the rational enjoyment of our fellow-creatures.

REMARKS ON THE SMALL PLANETS

SITUATED BETWEEN

MARS AND JUPITER.

By M. G. LESPIAULT,

PROFESSOR OF THE FACULTY OF SCIENCES OF BORDEAUX.

TRANSLATED FROM THE "MEMOIRES DE LA SOCIETE DES SCIENCES PHYSIQUES ET NATURELLES DE BORDEAUX," 1861. BY C. A. ALEXANDER.

I.

IN proportion as the discovery of small planets between Mars and Jupiter has been multiplied, those bodies have become, especially in Germany, the objects of a great number of highly interesting researches. The powerful magnifiers of the refractors of Dorpat and Munich have been applied to the study of their physical constitution and to the measurement of their diameters; their elliptical elements have been determined and rectified; their ephemerides calculated and occasionally even the principal perturbations of their movements. Attempts have been made to ascertain the law of the distribution of their orbits in space, from the position of the nodes and the inclination of those orbits to the ecliptic and other fixed planes, as well as from the measure and direction of their greater axes. It has been asked whether the course of these small bodies, describing curves so singularly interlaced, might not some day bring about a collision, or at any rate some approximation so considerable as to give rise to problems altogether new in celestial mechanics. The chief results of these various researches are to be found scattered through the publications of MM. Encke, d'Arrest, Littrow, Mœdler, &c., in the *Astronomische Nachrichten*, and the treatise on astronomy of Sir J. Herschel; as yet they have not been collected, and are, in general, but little known in France.* This defect I have endeavored to supply in the present notice, in which the actual state of our knowledge with regard to the small planets will be set forth, though for this purpose it has been found necessary to extend to seventy of these asteroids which we now know certain calculations which had been made only with respect to a part of them. This undertaking, in which I have been joined by M. Burat, professor at the Lyceum of Bordeaux, has led us, as will be afterwards seen, to modify or even to reject some of the conclusions at which the German geometricians had arrived.

* Professor Alexander, of Princeton, has long been occupied with the subject of the relations of the asteroids, and is now preparing an account of his results for publication in the "Smithsonian Contributions."

II.

Struck by the large interval which separates Mars from Jupiter, Kepler had been led, by theoretical considerations, to interpose between those two bodies an unknown planet : “*inter Martem et Jovem interposui planetam, (mysterium cosmographicum.)*” But of his own accord he afterwards renounced this hypothesis, which had been unfavorably received by learned cotemporaries. An astronomer of Florence, named Sizzi, protested, with particular earnestness, against such a doctrine. “There are,” said he, “but seven openings in the head, two eyes, two ears, two nostrils, and the mouth; there are but seven metals, and but seven days in the week; there are, therefore, but seven planets.” These, in the system of Ptolemy, were Saturn, Jupiter, Mars, the Sun, Venus, Mercury, and the Moon.

The idea of Kepler was revived in the second half of the 18th century. Lambert, Titius, and Bode successively called the attention of astronomers to the void which seemed to exist between Mars and Jupiter; Bode especially attached extreme importance to the celebrated law which bears his name, although, by his own acknowledgment, that law was due to Titius. In seeking a numerical relation between the distances of the planets from the sun, Titius had conceived the idea of the following series, in which each term, proceeding from the third, is double that which precedes :

0, 3, 6, 12, 24, 48, 96.

By adding 4 to each of these terms, we obtain a new series :

4, 7, 10, 16, 28, 52, 100.

In this series, 4 representing the distance of Mercury, 7 would represent the distance of Venus, 10 that of the earth, 16 that of Mars, 52 that of Jupiter, 100 the distance of Saturn; but the number 28 represented nothing and seemed properly to correspond to the distance of the Sun from an unknown planet. This hypothesis enlisted new partisans, especially in Germany, when, in 1781, the discovery of Uranus lent unexpected confirmation for the law of Bode. The Baron de Zach went so far as to publish in advance, in the *Almanach* of Berlin, the elements of the supposed planet, and he organized an association of astronomers for the search after that object. The zodiac was distributed into twenty-four zones, each of which was assigned to the special examination of one of the members of the society. The discovery was indeed not long in being made, but it proceeded from another quarter.

Piazzi, an astronomer at Palermo, had been for ten years occupied with the correction of the catalogue of Wollaston. A false indication in this catalogue called the attention of the observer to a certain region of the heavens and led him to examine minutely the most imperceptible stars. One of these, whose position had been determined the 1st of January, 1801, was found to be sensibly displaced the following day, and still more so on successive nights. Piazzi at first took it for a comet, and followed its course till the 11th of February, on which day his observations were interrupted by bad weather and

sickness. As early as the 24th of January he had sent intelligence of his discovery to Bode and Oriani; but his letters were two months in reaching them, at which time the new star was lost in the rays of the sun. Bode, therefore, could not distinguish it, but he remained convinced that this was the unknown planet, an opinion to which Piazzi subscribed and gave the name of Ceres to the object of his discovery.

A problem in astronomy, altogether new, now presented itself to geometers to determine, namely, the orbit of a planet after six weeks of observation. Many trials were made, but with results little accordant. The illustrious Gauss, then scarcely known, arrived at a solution by methods peculiar to himself, and it was by taking this calculation for the basis of his researches that Olbers found the planet anew, 1st January, 1802, a year, to a day, after its first discovery. From that time Ceres took a definite place in our system, very nearly at the distance from the sun indicated by the law of Bode, thus filling the gap which Kepler had signalized.

While constructing special charts to facilitate for the future the finding of Ceres on the celestial sphere, Olbers perceived, 28th of March, 1802, a star not in the catalogue: he followed it for several days and recognized, from its proper movement, a second planet situated at the same distance from the sun as the former, but describing a wholly different orbit. This was more than astronomers had asked for, and Pallas was received with a greater degree of reserve than Ceres. Some astronomers went so far as to deny its planetary character, an opinion to which the great eccentricity and extraordinary inclination of its orbit gave countenance by assimilating it to the comets, its resemblance to which was still more enhanced by the vaporous appearance which it assumed through the imperfect telescopes of Schröeter.

As to Olbers, he regarded the two bodies as fragments of a more considerable planet which some unknown force had shattered. On this hypothesis, it resulted from the laws of mechanics that all the projected asteroids, while describing orbits of very different eccentricity and inclinations, must continue to maintain the same mean distance from the sun, and repass, moreover, in each of their revolutions, the point in space where the catastrophe had occurred. That point was necessarily one of the nodes of the orbits of Ceres and Pallas, situated, the first in the constellation of Virgo, the second in the Whale. It was in these two regions of the heavens, according to the theory of Olbers, that the trajectories of fragments still unperceived must meet, and here, above all, that an attentive examination of telescopic stars might be expected to yield new discoveries; a conjecture which did not long remain unverified. The 2d of September, 1804, Harding perceived in the Whale a third planet, which he named Juno; and Vesta, the fourth and long the last, was discovered by Olbers himself, the 29th March, 1807, in the northern wing of Virgo. Vesta is much less remote from the Sun than the three other asteroids. The difference amounts to a fourth of its mean distance, that is, to twenty millions of leagues, a fact not calculated very strongly

to confirm the hypothesis of Olbers. In its oppositions, this planet comes sufficiently near the earth to attain the sixth degree of magnitude and be visible to the naked eye, and owes its name to the whiteness and purity of its light.

III.

Dating from the discovery of Vesta, the researches of astronomers remained long unfruitful, although their attention was constantly awake. It is true that Wartmann, at Geneva, in 1832, and Cacciatore, at Palermo, in 1835, gave notice of telescopic stars possessing a distinct and quite rapid movement of their own; but their observations, interrupted by unfavorable weather, were too incomplete and uncertain to admit of their following or again finding these assumed planets; nor was it till 1845, thirty-eight years after the discovery of Vesta, that a postmaster named Hencke, who occupied his leisure moments with astronomy, perceived the fifth of these small planets, and gave it the name of Astrea. Two years later he discovered Hebe, and, dating from this epoch, the new asteroids have succeeded one another so rapidly that their number at present is seventy [three.]

It is not without some surprise that we see discoveries of this kind, after having ceased for more than the third of a century, crowd upon us in the course of late years. This astonishing success of cotemporary astronomy may be explained, in great measure, by the increase in the number of observers, and by the construction of more extensive and exact charts than those of which our predecessors could avail themselves. The charts of Berlin, especially, which give the stars of the first ten magnitudes in the ecliptic regions, have been of the greatest service to astronomers in this kind of researches, while the more recent charts of the observatory of Paris are already becoming of signal utility. It is very rarely that the discovery of an asteroid can be regarded as the result of a lucky casualty. It is most frequently only in the course of laborious watchings devoted to this determined purpose, that a savant succeeds by means of a minute and patient comparison of the different regions of the sky with the charts which represent them, in detecting a disagreement, discovering a star not catalogued, and verifying the existence of a proper movement which shall assign a star to the class of planets. It may be added that charts of the requisite completeness are as yet provided but for a small portion of the heavens, and the explorer who would extend his search beyond this favored region must begin by constructing a special chart of the tract which he proposes to survey.

The ill success of Olbers in the ten last years of his researches is attributable to the fact that his examination was not extended to stars of less than the eighth magnitude. With not more than two or three exceptions, the planets discovered within the last fifteen years hardly transcend the ninth degree, while the greater part are of the tenth, and some even below the twelfth degree of magnitude. It is not easy therefore to estimate too highly the sagacity and admirable patience of those volunteers in astronomy who, in the strength of

their own resources, far from the great observatories, and often without the aid of the more exact class of charts, have added new worlds to our system and sometimes raised themselves, by the number and brilliancy of their discoveries, to the level of the most distinguished astronomers. Among these *laymen* of science the first rank belongs to our fellow countryman, M. Goldschmidt, who, but a few days ago, introduced to us his fourteenth planet, the seventieth of the group, and who has been, this year, the recipient of the gold medal of the Astronomical Society of London. In offering this testimonial, and in justification of its choice, the president of the society took occasion to point out the scantiness of the means at M. Goldschmidt's disposal in comparison with the grandeur of the results which he had obtained. Lutetia, for instance, the first of his acquisitions, has but the lustre of a star of the ninth or tenth magnitude, which is to say that its examination requires the closest attention on the part of astronomers who wish to observe it, even with the help of the great meridian instruments of Paris and Greenwich. And yet it was with a telescope, the aperture of which was but twenty-three lines, that our cotemporary proceeded to the discovery of this imperceptible object; a telescope supported on the bars of a chair and commanding but so limited a space of the heavens as might be seen from the windows of a garret in the Pays Latin.

The most fortunate competitors of M. Goldschmidt have been MM. Hind and Luther, who have each discovered ten planets, while M. de Gasparis has discovered eight, M. Chacornac six, M. Pogson, four, and M. Ferguson three.* To M. Hencke, as stated before, we owe two, and it is to him that the honor pertains of having first re-entered on the path of discovery which had been closed for thirty-eight years, and of having adopted, before any one else, the charts of Berlin as the basis of his researches. Within a space of some few days M. Temple associated his name with two of these minute stars, and there are seven astronomers who have severally attained a single success: MM. Graham, Searle, Laurent, Marth, Forster, Tuttle,† and Schiaparelli. Thus, by adding the four older planets, we have a total of seventy [three] asteroids actually known.

IV.

We cannot quit this subject without calling the attention of our readers to a singular circumstance connected with it, and which has been repeatedly taken notice of, especially of late, by the commission of the Academy of Sciences for prizes in astronomy. The distribution of the discoveries of small planets over the last fourteen years is strikingly unequal, and this inequality becomes still more remarkable if we compare months and weeks. Often, after a barren year, astronomers seem to wake up, and, in a space of some days, perceive three or four unknown asteroids; then they seem to relapse into slumber, and again, at the end of some months, rouse themselves for a new outbreak of discoveries. To be convinced of this extraordinary

* Of the National Observatory, Washington.

† Mr. Tuttle, of Harvard, has discovered another.

fact it is but necessary to cast an eye on the table of discoveries of asteroids. We shall there see more than one fortunate night in which science has been enriched with two of these minute bodies, and privileged weeks which have given us four of them. The 5th of October, 1855, for instance, M. Luther discovers Fides, and M. Goldschmidt, Atalanta. Erato springs into light at Berlin, and Titania in the United States, the 14th of September, 1860. The nights of the 9th and 12th had already been signalized by discoveries made by MM. Goldschmidt and Chacornac. April 26, 1861, Hesperia and Latona succeed one another at two hours' interval, and September 19, 1857, with a success unheard of in the annals of astronomy, M. Goldschmidt, for his own share, detects, very near one another, the *twin* planets Pales and Doris. Often the same planet, in the same night or nights but little remote, has been perceived by two and sometimes by three astronomers, observing from widely distant stations. It is in this way that M. Gasparis might dispute Irene with M. Hind, and Massilia with M. Chacornac. By a coincidence still more surprising, the 1st of March, 1854, Amphitrite is simultaneously discovered by MM. Marth, Chacornac, and Pogson, while, on his part, M. Luther discovers Bellona. There will be found in the table concurrences not less extraordinary in connexion with the names of Lutetia and Calliope, Themis and Phoccea, Pomona and Polymnia, Isis and Daphne. To what cause are we to attribute facts like these, too numerous to be fortuitous? Thus far, it must be acknowledged, astronomers have given no satisfactory explanation. By some it has been asked if we should not recognize herein an indication of contemporaneous formations, and of condensation actually taking place in the cosmic ring which gravitates between Mars and Jupiter, and if this idea does not find its confirmation in the mysterious changes of the rings of Saturn, recently signalized by MM. Bond and Lassell; but this hypothesis appears to us rash, and, on the whole, unphilosophical.

V.

The observation of the small planets is so difficult, and the discoveries are almost all so recent, that the notions which astronomy has gained with respect to each of these bodies in particular are still very small, there being several whose elements are determined with so little certainty and precision that the differences between one table and another extend, not merely to seconds, but to minutes and sometimes to degrees. We might cite a planet, Daphne, for instance, whose orbit is so little known, that for four years, notwithstanding assiduous research, astronomers have not been able to rediscover it. Nevertheless, the results obtained up to this time, incomplete as they are, suffice to enable us to group the asteroids according to the analogies and differences which they present, to study them collectively and in their mutual relations. This study is founded, in great part, on the analysis of the numerical tables which will be found at the end of the present notice.

Humboldt has classified the planets, after certain natural charac-

ters, in three families. The four *superior* planets, Neptune, Uranus, Saturn, and Jupiter, are distinguished by considerable volume and slight density; the time of rotation about their axes is about ten hours, and from this there results in these bodies considerable flattening; moreover, of the twenty-two satellites of the solar system, twenty-one pertain to this group. The four *inferior* planets, Mars, the Earth, Venus, and Mercury, have, on the contrary, much smaller volumes and much greater density; they revolve on themselves in nearly twenty-four hours, are but little flattened, and possess, among all the four, but one satellite, the Moon.

It is between these two groups so distinct, that the singular family of the asteroids revolves. Their orbits, in general more eccentric and more inclined to the ecliptic than those of the ancient planets, their volumes much inferior to those of the smallest satellites, and above all their mean distances from the sun constantly intermediate between those of Mars and Jupiter, evidently make of these small bodies a planetary family very different from the two others, and seem, indeed, rightly to consign them to a common origin. Such, as has been said, was the first idea of Olbers, from the time of his observing Pallas, and though his hypothesis must needs have appeared less probable after the discovery of Vesta, the geometers judged it sufficiently worthy of attention to be submitted to calculation. We find in the *Connaissance des Temps* for 1814 a curious memoir, in which Lagrange determines that, taking into account the velocity of translation of the primitive planet, and considering the thirty-four degrees of inclination of the orbit of Pallas as the maximum inclination of the new orbits of each fragment, a force capable of communicating to these fragments a velocity equal to twenty times that of a 24-pound cannon ball would have sufficed, in order that each of them should pursue an elliptical orbit around the sun, the common intersection of the new planes passing at the point where the explosion had taken place. A geometer would not nowadays undertake this calculation; for an examination, however rapid, of the mean distances of the 70 [three] asteroids at present known, permits us no longer to believe that their orbits could ever have passed at the same point. These mean distances, in effect, which will be found expressed in radii of the earth's orbit in one of the columns of our tables, vary between the numbers 2.20 for Flora or Harmonia, and 3.45 for Maximiliana, one of the planets most recently discovered. This important difference corresponds to about fifty millions of leagues of four kilometers. What would it be if we should compare the extreme distances? We should see Phocœa and Melpomene approach the sun as near as 1.79 radii of the earth's orbit, while Euphrosyne and Maximiliana withdraw from that luminary to distances marked respectively by 3.83 and 3.93. What is usually called the *zone* of the small planets extends, therefore, over a width of ninety millions of leagues, that is, over a space greater than the distance of the sun from the inferior border of that zone. The zone of the interior planets is twice as narrow, and there is consequently no more reason for regarding the asteroids as fragments resulting from the explosion of a single planet, than there

would be for referring Mars, the Earth, Venus, and Mercury to a similar origin. It would be in vain to rely on the great eccentricities of the orbits with the view of instituting an inquiry, whether, notwithstanding the differences in their great axes, those orbits did not present some points sufficiently adjacent to lend a degree of probability to the hypothesis of Olbers. We should find twenty-five millions of leagues to be the least distance for the orbits of Harmonia and Doris, thirty millions for Mnemosyne and Flora, forty-five millions for Maximiliana and Ariana. It is true that the nodes and apsides change their places, and, notwithstanding the slowness of those displacements, it is possible that, some thousands of ages before the present era, the orbits in other relative situations may have presented points more approximate than at present. But in vain should we ascend the course of ages, or even arbitrarily modify the position of the planes in which the asteroids revolve; we shall still have to dispose of minimum distances of at least fifteen millions of leagues, since the aphelion of Nemausa, for instance, is but at 2.52 units of distance from the sun, while the perihelion distance of Mnemosyne is indicated by 2.82, and that of Maximiliana by 2.96. It cannot be admitted that the perturbations of the planetary system could have produced such difference, and the hypothesis of Olbers is thus shown to be absolutely irreconcilable with the data which we now possess with regard to the asteroids. Is it necessary on that account to renounce the idea of a common origin? Not so; for, if we admit, with Laplace, that the planets have been formed by the condensation of rings of vapor successively abandoned by the sun in cooling, it suffices, in order to explain the coexistence of all the asteroids between Mars and Jupiter, to suppose that there existed in one of the rings many simultaneous centres of attraction, and we must acknowledge, with M. Le Verrier, that the difficulty is not to account for the exception, but, on the contrary, to comprehend why it did not become the rule.

VI.

If science shall ever succeed in resolving these delicate questions, it will doubtless be by adopting as a basis the relations of form and position of the different planetary orbits. What we should propose at present is less to mark out the work than to inquire in what direction the future seems likely to hold a discovery in reserve for astronomers. For that purpose we must see if the comparison of analogous elements reveals the existence of any remarkable law.

DISTANCES FROM THE SUN AND THE EARTH.

Let us add to what has been just said on this subject in discussing the hypothesis of Olbers, that the mean of all the distances of the seventy asteroids from the sun is 2.645 radii of the earth's orbit, or about 105 millions of leagues; which is almost exactly the distance of Fides, and less than that of Ceres and Pallas which best corresponds with the law of Bode. Of the seventy orbits, thirty-eight have their greater axes below the mean, and thirty-two above—an

inequality readily explained ; for the difficulty of discoveries increasing in proportion to remoteness from the sun, the planets known to us will naturally be more thronged together the nearer they are to that luminary. It is to be presumed, for the same reason, that the real mean is higher than that stated ; for it is doubtful if existing instruments would enable us to discover an asteroid whose perihelion distance might be higher than three.

The distances of the small planets from the earth vary between widely extended limits, which may reach from one to five radii of the earth's orbit. The nearest approach evidently takes place at the instant of the star's opposition ; the distance being then about 0.8 for Phocœa, Melpomene, Iris, and Flora, and rising to 1.8 for Mnemosyne and 1.9 for Maximiliana. It is only at this point of time, for the most part, that the discovery or even the observation of one of these minute bodies becomes possible. Hence we must hasten to calculate its elements, if we wish again to find it in the heavens, after an absence of several months. When the calculation is founded on observations either imperfect or made at too short intervals, it sometimes happens that the planet is lost.* Oftenest, however, succeeding observations permit us to rectify the errors of a first result ; thus it was at first believed that Nysa would intersect the orbit of Mars, while, in fact, it is always at least fifteen millions of leagues beyond that planet. Nemausa promised still more. M. Valz had announced that it would pass at eight millions of leagues from the earth, and that some day it might even approach within three millions of leagues. Astronomers have been obliged to renounce this hope, and that to their great regret ; for the oppositions of this little orb would have furnished them an excellent means of determining the distance of the earth from the sun, a base so essential and yet so inaccurately known for all the dimensions which we attribute to the solar system.

TIMES OF THE SIDEREAL AND THE SYNODAL REVOLUTIONS OF THE ASTEROIDS.

We know that by the third law of Kepler the sidereal revolution of a planet depends on the length of half the greater axis of its orbit. The number 2.645, which has been assigned, as above stated, for the mean planet, corresponds to a mean heliocentric movement of $824''.8$, and to a sidereal revolution of 1,571 days, that is to say, of about $4\frac{1}{3}$ years. The shortest revolutions are those of Flora (1,192.9 days) and of Ariana (1,197.7 days ;) the longest are those of Euphrosyne (2,048 days) and of Maximiliana (2,343 days, or more than six years.) We see that these numbers vary nearly as one to two. Of these planets sometimes two and even three have the duration of their year almost identical ; thus between Metis (1,346.31 days) and Iris (1,346.46) the difference is but $3\frac{1}{2}$ hours, and is but that of one day between Asia (1,551 days) and Pseudo-Daphne, (1,552.) We may also remark

* This occurred in the case of Daphne. In spite of assiduous and laborious research, M. Goldschmidt has not been able to rediscover this planet ; but, while thus engaged, he detected Pseudo-Daphne. This again having been lost in turn, he has but just succeeded in refinding it, (August 27, 1861,) after sounding the heavens for three months.

Pandora, (1,683.18 days,) Pallas, (1,683.86,) and Lœtitia, (1,684.8.) These numbers, it should be added, are far from being definitive. We have adopted the tables of M. Mædler, who inscribes the names of the calculators, besides the results they have obtained. Should a different catalogue be preferred, that, for instance, of the *Annuaire du Bureau des Longitudes*, these approximations might perhaps disappear, but we should find others quite as remarkable. It were to be wished, on that account, that the attention of astronomers should be directed, in preference, to those asteroids whose revolutions present, in point of duration, but slight differences; perhaps those differences will be still further diminished by a more rigorous calculation of elements. In any case, when their progression shall have brought into heliocentric conjunction two planets, describing their orbits in the same number of days, their prolonged proximity will compensate, no doubt, for the feebleness of their masses, and there must result perturbations of a singular nature—perhaps a libration, which will reduce their mean years to a perfect identity.

The synodal revolution of an asteroid is evidently so much the longer as its mean movement is more rapid. Thus Flora or Ariana come into opposition but nine times in thirteen years, while Euphrosyne or Maximiliana do so nine times in eleven years.

Eccentricities.—The orbits of the asteroids are, in general, much more eccentric than those of the elder planets. The lowest eccentricities (Concordia 0.040, Harmonia 0.046,) are three times greater than those of the earth; the highest (Polymnia 0.338, Asia 0.320,) are almost equal to that of the comet of Faye. On the whole, of the 70 orbits now known, 18 are more eccentric than the orbit of Mercury, (0.2056,) 8 less so than the orbit of Mars, (0.096,) and the rest are of intermediate eccentricities. Hence it results that if the small planets have, like the great, a daily movement about an axis more or less inclined to the plane of their orbits, the duration of seasons must be there very unequal, and the temperature, for one of their hemispheres, much more extreme than on the earth. Polymnia, for instance, is twice as near the sun at its perihelion as at its aphelion; the heat and light, therefore, which fall on its entire surface vary in the ratio of 4 to 1: the apparent diameter of the sun is then 8' 27" at its maximum and 4' 11" at its minimum, while, for the earth, the extreme numbers differ by only $\frac{1}{30}$ of their amount. From this it results that, if the equator of Polymnia is not very much inclined to its orbit, the seasons there depend, above all, on the distances from the sun, which circumstance determines winter or summer for all the points of the planet at the same time.

VII.

DISTRIBUTION OF THE REMARKABLE POINTS OF THE ORBITS ON THE CELESTIAL SPHERE.

It is sufficient to cast an eye on the columns in which are inscribed the longitudes of the perihelia, or those of the ascending nodes, to see that these longitudes are not distributed after a uniform manner

between 0° and 360° . This, astronomers had already remarked, when as yet they were acquainted with but from 12 to 15 asteroids, and it has been confirmed by further discoveries: it is a fact highly worthy of attention, on account of the consequences which may perhaps be some day derived from it in relation to the origin and formation of the planets. Unfortunately it does not seem easy to detect the law of the phenomenon; but in this there is nothing surprising. For, on one hand, the perihelia and nodes are constantly being displaced, and, on the other, the plane of the ecliptic, itself movable, is unimportant in the general aggregate of the solar system. It was natural, then, to inquire whether we might not arrive at a more marked convergence, by substituting for the lines of the nodes of the planetary orbits the intersections of those orbits with a fundamental plane, such as the invariable plane of the solar system, or even the equator of the sun itself. At the epoch when MM. Mædler, Cooper, d'Arrest, &c., undertook these researches and others of the same kind, their investigations embraced scarcely half the planets now known, nor did they, moreover, pursue a uniform method. By M. Burat and myself all the calculations of these astronomers have been repeated, adopting the numbers which appeared to us most worthy of confidence, as well for the elements of the asteroids as for the determination of the solar equator or invariable plane. We have, besides, conformed to a constant rule in our search for the *centre of convergence* of a system of lines of the same kind. This rule, at once simple and natural, consists in regarding these lines as so many equal forces and in seeking the direction of their resultant. The same calculation gives also the quantity of this resultant, a quantity evidently so much the more considerable as the convergence is more marked; for this reason we give the name of *coefficient of convergence* to the quotient of the total resultant by the sum of the components.

Convergence of the perihelia.—The rule just indicated gives us $47^\circ 20'$ for the longitude of the perihelia on the celestial sphere, and 0,255 for a coefficient of convergence. The hemisphere, which has for its pole the point thus determined, comprehends the perihelia of 46 asteroids, having a mean eccentricity marked by 0,168. The opposite hemisphere contains but 24 perihelia, and the mean eccentricity of the corresponding orbits is but 0,137. The centre of convergence determined by M. Mædler for the first 58 asteroids had for its longitude $52^\circ 25'$, and approaches, consequently, much more than ours the group of the Pleiades, where, as is known, M. Mædler places the centre of the immense orbit described in space by the sun followed by its retinue of planets.

Convergence of ascending nodes.—The point of convergence of the 70 ascending nodes, on the plane of the ecliptic, has for its longitude $135^\circ 53'$, and the coefficient of convergence is 0,256, very nearly as for the perihelia. Forty-six ascending nodes are found in the hemisphere which has for its pole the centre of convergence, and 24 in the opposite hemisphere. The ratio of these two numbers is the same as for the perihelia, and we will recall, in this connexion, a singular remark which was made by M. Cooper some years ago, that

in considering the 10, 20, 30, 40, or 50 planets first known, we shall always find, nearly to a unit, the same number of perihelia and of ascending nodes in the respective hemispheres where these points have their centres of convergence.

The inequality in the distribution of the ascending nodes on the celestial sphere is still more marked when we take the angular subdivisions lower than 90° . If we divide, for instance, the ecliptic into six arcs of 60° , reckoning from the fifth degree of longitude, we find:

From 5° to 65°	10 ascending nodes.
From 65° to 125°	12 do.
From 125° to 185°	23 do.
From 185° to 245°	10 do.
From 245° to 305°	6 do.
From 305° to 5°	9 do.

The general table shows, moreover, independently of the predominance of nodes in one part of the heavens, a general disposition of these nodes in partial groups, isolated one from the other; for instance, towards the 8th degree of longitude, the 43d, the 68th, the 80th, &c.

It may be asked, as we have already observed, whether a more perspicuous law might not be obtained by substituting for the plane of the ecliptic the invariable plane or the plane of the solar equator. We have made this double calculation for each of the 70 planets, beginning with a determination as exact as possible of the position of the invariable plane—that is to say, by taking account, in conformity with the remarks of Poincot, of the areas which arise from the rotation of the sun and the great planets. This plane, whose elements differ little from those which Laplace had adopted, is only inclined about $1^\circ 41'$ to the ecliptic. It hence results that the nodes group themselves on the two planes much after the same manner, and that the consideration of the invariable plane casts no new light on the question.

At first view it would seem to be quite otherwise with regard to the plane of the solar equator. As early as the beginning of the last century, (*Memoires de l'Academie des Sciences*, 1734,) Cassini had observed that the intersections of the equator of the sun with the orbits of Venus, the earth, Mars, Jupiter, and Saturn, grouped themselves on an arc of less than 25 degrees in extent. In 1851 M. d'Arrest made an analogous calculation for the first thirteen asteroids, and found that, notwithstanding a more considerable mean divergence of the ascending nodes on the solar equator, eleven of those nodes out of thirteen were situated in the same hemisphere with the nodes of the ancient planets. We have taken up and completed the work, as well for the eight great planets now known as for the 70 asteroids, and we give the results at which we have arrived, while adopting for the position of the solar equator the numbers ascertained by M. Langier:

Longitude of the ascending node of the solar equator on the ecliptic.....	$75^\circ 8'$
Inclination.....	$7^\circ 9'$

	For the large planets.	For the small planets.
Arc of the solar equator, reckoned from the ascending node of that equator on the ecliptic to the centre of convergence	184° 9'	164° 56'
Coefficient of convergence	0,904	0,624

These coefficients are, we see, much more considerable than those found above. Moreover, of the 70 ascending nodes, 62 are situated in the same hemisphere with the centre of convergence, and only eight in the opposite hemisphere. But, notwithstanding the apparent singularity of this result, a little reflection will suffice considerably to diminish its importance, for it arises, in great measure, from the fact that the planetary orbits are less inclined to one another than to the equator of the sun. We perceive, in effect, without difficulty, *a priori*, that closely adjacent planes, conformably with lines closely approximate, must intersect another plane, which forms with each of them an angle of some degrees. The same considerations explain why the convergence is more marked in regard to the great than the small planets. It must be admitted, then, that this phenomenon has not the importance attributed to it by Cassini and some modern astronomers; but the calculation, of which we have just given the results, is not less useful on that account for determining, better than the nodes on the ecliptic could do, the position in space of the *mean orbit* of the asteroids, of which the masses should be considered as equal. We may, with M. d'Arrest, regard as the plane of the mean orbit the plane which cuts the solar ecliptic according to the line of convergence, under an inclination equal to the mean of the inclinations of all the asteroids; that is to say, under an angle of 9° 58'. No doubt the inclination thus determined is not absolute, and would change slightly at each new discovery. But as we find results but little different when the calculation is confined in succession to the 30, 40, or 60 first known asteroids, we are justified in concluding that these results are sufficiently approximate to that which the whole number of the small planets would give, if all were discovered.

RELATION BETWEEN THE ECCENTRICITIES AND INCLINATIONS OF THE ORBITS.

M. d'Arrest, while remarking that great inclination is not always accompanied by great eccentricity, and that a consideration of the separate orbits guides us to no relation between these two elements, conceives, nevertheless, that if these orbits are suitably grouped in the order of their inclinations to the solar equator, the mean of the inclinations, for each group, would increase with the mean of the eccentricities; he has even arrived, for the first thirteen planets grouped by fours and by threes, at the following empirical formula, in which *i* expresses the mean inclination, and *e* the mean eccentricity of each group:

$$e = 0.0851 + 0.0068 i.$$

M. Littrow, who has given this formula in his *Astronomy*, (1854,)

adds that it would probably be confirmed by the discovery of new asteroids. The results obtained by us are not in accordance with this supposition. In whatever manner we may group the orbits, it is impossible to arrive at any law for inclinations below 12 or 13 degrees. The sole remark which remains true is, that the orbits, much inclined to the solar equator, are also in general very eccentric; but as, on the other hand, these orbits are much inclined to the ecliptic as well as to the solar equator, we see that there is nothing in the preceding remark which can be specially relative to this last plane. Still, exceptions to the rule ought to be pointed out; for instance, the most eccentric of all the orbits, that of Polymnia, makes but an angle of two degrees with the ecliptic, and of six with the solar equator; while the orbit of Egeria possesses, with inclinations of 16 and 11 degrees to these same planes, an eccentricity of only 0.089.

VIII.

INTERLACEMENT OF THE ORBITS AND APPROXIMATIONS OF THE SMALL PLANETS.

If we compare two by two the positions of the orbits of the asteroids, we see that it is rarely that one of them is completely enveloped by another; most frequently they are intertwined after the manner of the rings of a chain. M. d'Arrest was the first to remark that if we represented all the orbits under the form of material hoops, these hoops would be so intervolved that we might by means of one of them raise all the rest. When but thirteen of the small planets were yet known, they seemed to form two separate groups, between which the planet Iris served as a connecting link; but at present this remark is no longer applicable.

M. Littrow, the learned director of the Observatory of Vienna, has particularly occupied himself with the research of the *physical conjunctions* which, from this time till the end of the century, may lead to remarkable approximations among the asteroids. The problem consists of two parts: 1st, to find the shortest line which can be drawn between two orbits; 2dly, to calculate the epoch at which the planets describing those orbits shall pass nearly simultaneously by the two extremities of that line. The first part of the problem is the most important and most difficult. M. Littrow has investigated it by a graphic method, which consists in seeking the intersection and mutual inclination of the two orbits under consideration, tracing out the two curves, taking the plane of one of them for the plane of projection, and describing the other by the processes of descriptive geometry. The astronomer of Vienna has thus found for the 42 orbits submitted to discussion, 548 mutual distances less than the tenth part of the radius of the terrestrial orbit—that is, than four millions of leagues. In more than eighty cases the elements of the orbits are so completely different that it is impossible to foresee between these curves any remarkable approximation, and yet the graphic method spoken of brings them nearly to an intersection. The cases of double ap-

proximations are computed at one hundred and eight; sometimes two orbits continue very near one another through a great part of their circuit; thus, for a space of 192 degrees, the orbits of Euterpe and Mas-salia are never separated more than a tenth part of the half of the greater axis of the earth's orbit. The approximations being once indicated by the graphic method, we can determine them more exactly by means of calculation, and it is easy afterwards to investigate the period at which two planets must pass at the same time by the nearest points of their respective orbits. M. Littrow has thus found that the 42 planets he has studied would, in the decennial period, 1858 to 1867, undergo eighteen *physical conjunctions*, to which he has invited the attention of astronomers. It is readily conceived that the number of these conjunctions increases by a law much more rapid than the number of new planets in such sort that, if we should recommence the calculation for the 70 planets now known, we should doubtless find many other approximations of the same kind; but this would require long and tedious application, without leading to definitive results as long as there shall remain asteroids to be discovered. There are cases, however, where the investigation of physical conjunctions only requires a graphic construction extremely simple; such is the case where the two orbits to be considered have very nearly the same line of nodes and the same inclination to the ecliptic. We may particularly specify the orbits of Fides and Maia; their elements present less difference than often exists between the elements of one and the same planet, as given by different calculators. This is shown by a comparison of the two following tables:

	Fides.	Maia.
Longitude of the ascending node	8° 12'	8° 12'
Inclination	3° 7'	3° 5'
Semi-great axis	2,642	2,654
Eccentricity	0,174	0,155
Longitude of perihelion	65° 7'	43° 54'

If we disregard the mutual inclination of the two orbits, which is but of two minutes, we may trace these two orbits on the same plane, and we thus find two points of intersection, one of which almost coincides with the perihelion of Maia. The distance between the two curves rises at no point beyond the twentieth part of the radius of the terrestrial orbit. At the present time the mean longitudes of the two planets differ about forty degrees, but this difference constantly diminishes, though slowly. When it shall have disappeared, the two planets, notwithstanding their inconsiderable mass, and by reason of their continual nearness, will exert upon one another an action, perhaps, sufficiently strong to unite them in one single body, or cause them to revolve, as the components of a double star, around their common centre of gravity.

IX.

ASPECT, PHYSICAL CONSTITUTION, AND REAL MAGNITUDE OF THE ASTEROIDS.

At the commencement of the present century Schröeter devoted himself particularly to the telescopic study of the four planets Ceres, Pallas, Juno, and Vesta. The care which this astronomer employed in his observations gave great importance to the results of his labors. Hence these results were long admitted without dispute, and we find them reproduced in the most recent French treatises, although, for the most part, they have been shown some years ago to be inexact. Thus Schröeter had deduced from multiplied measurements the apparent diameters of the four planets, and had concluded that the largest amongst them, Pallas, presented nearly the same magnitude as the moon. William Herschel, on the other hand, obtained numbers considerably lower, and yet these numbers were still too high, by reason of the effects of irradiation. This we ascertain from the observations made, under unusually favorable circumstances, by MM. Mædler and Lamont, with the aid of the excellent refractors of Dorpat and Munich. From the opposition of 1836, M. Lamont found $0''.51$ for the angular diameter of Pallas, at the mean distance 2.77, which gives about 250 leagues for the real diameter of the planet. In April and May, 1847, M. Mædler found in like manner one hundred leagues for the diameter of Vesta. It is equally to the effects of the irradiation that we must refer the cause of the vaporous appearances assumed by Ceres and Pallas in the telescope of Schröeter; appearances so marked that the astronomer of Lilienthal attributed to those planets atmospheres 200 leagues in height. The great refractor of Dorpat exhibits the disc of Pallas as clear as that of Vesta, and thus vanishes one of the analogies which has been often insisted upon between the comets and the asteroids.

The existence of a very considerable and turbulent atmosphere would have sufficed, according to Schröeter, to explain the remarkable variations which that astronomer had detected from day to day in the brilliancy of Pallas or Ceres. At present it is necessary to seek elsewhere the cause of this phenomenon, the reality of which has in the mean time been confirmed by later observations. It is probable that the asteroids, as an effect of their daily movement, present to us in succession, regions unequally adapted to reflect the light of the sun. But differences of this nature do not, according to M. Littrow, sufficiently account for the rapidity and extent of the variations observed, and, above all, for the truly stellar brilliancy with which the planet Vesta sometimes sparkles, even when its disc presents no appreciable dimensions. The astronomer of Vienna thinks that the asteroids are of irregular or polyhedric forms, and that they sometimes turn towards us lustrous facets like those of the diamond, or even endowed perhaps with an intrinsic light. However this may be, these variations of brightness are observed in several of the

asteroids discovered within fifteen years. For instance, M. Goldschmidt observed that on the 26th January, 1858, Pales was invisible through a telescope which showed stars of the twelfth magnitude, while on the 2d of February following, this same planet equalled in brightness neighboring stars of the eleventh magnitude.

We have just seen that the attempts of Schroeter, Herschel, Lamont, and Mædler to arrive at a direct measurement of the diameters of Pallas, Ceres, or Vesta, have yielded results but little accordant. With regard to the other asteroids such measurements have not been even attempted; but the approximative value of the real dimensions of each of them has been obtained from indirect considerations. In fact, the *magnitude* under which a star shining by a reflected light is to be classed, depends evidently on the *distance of that star from the sun*, on its *distance from the earth*, on its *real diameter*, and on the *reflective power* (albedo) of its surface. Four of these quantities being given, we can find the fifth. For the ancient planets, the *albedo* alone is unknown; for the magnitude of each of them is easily expressed in numbers by taking for bases the photometric measurements of MM. Steinheil and Seidel. We thus find that the *albedo* is nearly the same in Saturn, Jupiter, Venus, and Mercury; a little inferior in Mars, on account of the red color of that star. As the asteroids, moreover, have in general the white tint of the four first planets, we see that it is allowable to suppose, also, that they have the same reflective power. Hence the real diameter of these small bodies will alone remain unknown.

This being granted, it results, from the investigations of M. Seidel, that the *magnitude* of a star increases by one unit when its distance from the earth increases in the ratio of 1 to 1.6. From this M. Arge-lander has deduced a very simple formula.

Let:

$$b = 1.6;$$

a , the semi-axis major of the orbit of a planet;

r , the mean distance of that planet from the sun;

Δ , the mean distance of that planet from the earth;

M , the magnitude of the star for $r = a$ and $\Delta = a - 1$;

m , the magnitude of the star for $r = r_0$ and $\Delta = \Delta_0$;

d , the real diameter expressed in leagues of 4 kilometers.

We shall have :

$$\begin{aligned} \log. d &= 2,7913 - m \log. b + \log. r_0 + \log. \Delta_0, \\ &= 2,7913 - M \log. b + \log. a + \log. (a - 1.) \end{aligned}$$

This formula gives the following table for the *magnitudes* of 50 asteroids and for their real diameters :

Names.	M.	d.	Names.	M.	d.
		<i>leagues.</i>			<i>leagues.</i>
Vesta	6.5	105	Euterpe	10.2	15
Ceres	7.4	89	Bellona	10.3	24
Pallas	8.2	61	Lutetia	10.3	16
Iris	8.3	39	Phocæa	10.5	14
Hebe	8.4	39	Thetis	10.6	15
Eunomia	8.5	46	Fides	10.7	18
Lætitia	8.6	49	Nysa	10.7	17
Flora	8.8	25	Thalia	10.7	16
Juno	8.9	42	Calliope	10.8	20
Metis	8.9	30	Pales	10.8	18
Harmonia	9.1	40	Proserpina	10.8	16
Amphitrite	9.1	33	Leda	10.9	15
Massilia	9.1	27	Isis	10.9	10
Parthenope	9.4	25	Pomona	11.0	13
Melpomene	9.4	21	Euphrosyne	11.3	20
Egeria	9.4	28	Polymnia	11.3	14
Hygeia	9.5	45	Doris	11.4	21
Fortuna	9.5	24	Aglaia	11.4	15
Irene	9.6	27	Circe	11.5	9
Urania	9.7	20	Eugenia	11.6	11
Psyche	9.8	86	Themis	12.1	14
Astræa	9.8	24	Leucothoe	12.1	9
Victoria	10.0	21	Verginia	12.4	8
Ariana	10.0	14	Hestia	12.5	6
Daphne	10.2	17	Atalanta	12.9	8

It will be remarked that this calculation gives for the diameter of Vesta nearly the same number as the direct measurement, but a much less number for the diameter of Pallas. We are struck, also, at the extreme smallness of some asteroids, such as Hestia, Verginia, Atalanta, Circe, Leucothoe, &c., which have a radius of scarcely three or four leagues, and whose surface is less than that of one of our smallest departments. A good walker might make the tour of one of these microscopic globes in a day. With an equal density, gravitation at its surface would be three or four times less than on the earth.

In short, if we take our computation from the preceding table, we find that the united volumes of the 50 planets above enumerated would give scarcely the two-hundredth part of the volume of our satellite.

X.

PERTURBATIONS OF THE ASTEROIDS, ETC.

The investigation of the perturbations of the asteroids has been as yet scarcely sketched out ; the extreme difficulty of the problem results, on the one hand, from the small number of observations of which astronomers can avail themselves, and, on the other, from the

magnitude of the inclinations and eccentricities of the orbits. Hence, as has been already said, there are several of these orbits of which the elements are at present known with but very little exactness. A more rigorous determination of these elements, and the investigation of their secular variations, constitute one identical problem whose solution exacts the employment of new methods. There have been constructed, indeed, from year to year since the beginning of the century, tables of the four older asteroids by following the processes of interpolation indicated by Gauss and Encke. MM. Brunow and Hansen have even extended these processes to some of the more recently discovered planets, such as Flora. But we arrive in this way only with great difficulty at the analytic expression of the periodic or secular inequalities. M. Hansen has recently published a new theory of the planetary perturbations, the advantages of which are pre-eminently decisive when the orbits are very much inclined or very eccentric, and the distinguished astronomer has himself applied this theory to the calculation of the perturbations of Egeria. M. Le Verrier, on his part, has discovered the great inequality of Pallas by a method wholly different, to which M. Hoüel has lately added some improvements which facilitate its application. Such are very nearly the attempts which have been made by geometers up to the present time to master the theory of the small planets.

We have here as well one of the most recent as most interesting of astronomical questions. The perturbations, necessarily very great, which result from the attraction exerted by Jupiter, will give, when they shall have been calculated, a very exact determination of the mass of that planet. It will be more difficult to calculate the individual masses of the asteroids, but we shall arrive probably without excessive difficulty at a knowledge of the precise value of their combined masses. M. Le Verrier has already deduced from his investigations respecting Mercury and Mars the higher limit of that value, and it is to the following formula that he has himself reduced his remarkable conclusions :

1st. Besides the planets Mercury, Venus, the Earth, and Mars, there exists between the Sun and Mercury a ring of asteroids which collectively constitute a mass comparable to that of Mercury itself.

2d. At the distance of the earth from the sun there is found a second ring of asteroids whose mass is at most equal to the tenth part of the mass of the earth.

3d. *The total mass of the asteroids comprised between Mars and Jupiter is, at most, equal to the third of the mass of the earth.*

4th. The masses of the two latter groups are complementary one of the other. Ten times the mass of the group situated at the distance of the earth, *plus* three times the total mass of the small planets situated between Mars and Jupiter, form a sum equal to the mass of the earth.

If we compare these results of the calculus with what has been said above of the smallness of the volume of the asteroids, we shall arrive at a remarkable consequence. By supposing that the mean density of these bodies is equal with that of the earth, the united

masses of those with which we are acquainted would, at the most, form the ten-thousandth part of the mass of our globe; that is to say, about the two-thousandth part of the total mass of the cosmic ring comprised between Mars and Jupiter. The number of the unknown asteroids would then be at least two thousand times more considerable than the number of those already discovered. It is in this sense that M. Le Verrier says that these small bodies are indefinite in number, and it is on this account especially that he is opposed to the designation of each of them by a particular name, since it will be necessary some day to stop doing so. But to this M. Hind and almost all other astronomers answer that the number of the asteroids which our instruments will enable us to perceive is probably sufficiently restricted, and that there would be great inconvenience in substituting simple ordinal numbers for the present nomenclature, on account of the inevitable confusion which would result therefrom. We are ourselves of this opinion, and we may perhaps be permitted to add, as corroborative of the good reasons already given, that if the proposal of M. Le Verrier were adopted, all investigations of the nature of that which we now publish, after the example of what has been often done in Germany, would by that means become almost impossible.

We terminate this paper with the table of the elements of the small planets, prepared from the last edition of the *Astronomy* of M. Mædler, and the last numbers of the *Astronomische Nachrichten*.

Synoptical table of the elements of the small planets.

No.	Names.	Authors of the discovery.	Date of the discovery.	Mean distance from the sun.	Times of revolution.	Eccentricity.	Inclination.	Longitude of the ascending node.	Longitude of the perihelion.
					Days.		° /	° /	° /
1	Ceres	Piazzi.....	Jan. 1, 1801	2,766	1680,26	0,080	10 36	80 50	149 27
2	Pallas	Olbers	Mar. 28, 1802	2,770	1683,86	239	34 42	172 40	122 10
3	Juno	Harding	Sept. 1, 1804	2,669	1593,21	255	13 3	171 1	54 5
4	Vesta.....	Olbers	Mar. 29, 1807	2,360	1324,84	090	7 8	103 26	250 21
5	Astræa	Hencke	Dec. 8, 1845	2,576	1510,55	190	5 19	141 33	134 44
6	Hebe	Hencke.....	July 1, 1847	2,425	1379,63	0,201	14 46	138 36	15 13
7	Iris.....	Hind	Aug. 13, 1847	2,386	1346,46	231	5 27	259 47	41 29
8	Flora	Hind	Oct. 18, 1847	2,201	1192,99	156	5 53	110 28	33 4
9	Metis	Graham	April 25, 1848	2,386	1346,21	123	5 36	68 33	71 10
10	Hygeia	Gasparis.....	April 12, 1849	3,149	2041,40	100	3 47	287 45	227 55
11	Parthenope ...	Gasparis.....	May 11, 1850	2,452	1402,91	0,099	4 37	125 5	316 11
12	Victoria	Hind	Sept. 13, 1850	2,334	1302,71	219	8 23	235 42	301 47
13	Egeria	Gasparis....	Nov. 2, 1850	2,575	1509,72	088	16 32	43 20	119 32
14	Irene	Hind	May 19, 1851	2,589	1522,01	165	9 7	86 42	179 29
		Gasparis.....	May 23, 1851						
15	Eunomia	Gasparis	July 29, 1851	2,643	1569,37	188	11 44	294 1	27 52
16	Psyche	Gasparis.....	Mar. 17, 1852	2,926	1828,41	0,135	3 4	150 37	12 35
17	Thetis	Luther	April 17, 1852	2,474	1421,07	126	5 35	125 30	259 26
18	Melpomene ...	Hind.....	June 24, 1852	2,296	1270,61	217	10 9	150 6	15 19
19	Fortuna	Hind	Aug. 22, 1852	2,441	1393,29	158	1 32	211 32	30 24
20	Massilia.....	Gasparis	Sept. 19, 1852	2,409	1365,96	143	0 41	206 43	98 36
		Chacornac	Sept. 20, 1852						
21	Lutetia	Goldschmidt	Nov. 15, 1852	2,435	1388,21	0,162	3 5	80 33	327 8
22	Calliope	Hind	Nov. 16, 1852	2,909	1812,28	103	13 44	66 43	58 13
23	Thalia	Hind	Dec. 15, 1852	2,625	1553,39	235	10 14	68 1	123 16
24	Themis.....	Gasparis	April 5, 1853	3,142	2034,22	117	0 48	36 11	139 9
25	Phocæa.....	Chacornac	April 6, 1853	2,402	1359,99	253	21 35	214 5	302 55

Synoptical table of the elements of the small planets—Continued.

No.	Names.	Authors of the discovery.	Date of the discovery.	Mean distance from the sun.	Time of revolution.	Eccentricity.	Inclination.	Longitude of the ascending node.	Longitude of the perihelion.
					Days.		° /	° /	° /
26	Proserpina	Luther	May 5, 1853	2,656	1581.08	0.087	3 36	45 56	235 20
27	Euterpe.....	Hind	Nov. 8, 1853	2,347	1313.55	172	1 35	93 45	87 39
28	Bellona.....	Luther	Mar. 1, 1854	2,778	1691.57	150	9 21	144 40	122 26
29	Amphitrite ..	Marth.....	Mar. 1, 1854	2,555	1491.58	072	6 7	356 27	56 39
		Pogson	Mar. 1, 1854						
30	Urania	Chacornac	Mar. 2, 1854						
		Hind	July 22, 1854	2,364	1327.75	127	2 6	308 15	31 24
31	Euphrosyne...	Ferguson	Sept. 1, 1854	3,156	2048.01	0.216	26 25	81 29	93 55
32	Pomona	Goldschmidt.....	Oct. 26, 1854	2,586	1519.56	082	5 29	220 52	194 27
33	Polymnia	Chacornac	Oct. 28, 1854	2,864	1770.89	337	1 57	9 19	340 46
34	Circe	Chacornac	April 6, 1855	2,688	1609.46	105	5 26	184 49	149 49
35	Lencothea	Luther	April 19, 1855	2,985	1883.66	222	8 12	356 11	198 38
36	Atalanta.....	Goldschmidt.....	Oct. 5, 1855	2,749	1664.50	0.298	18 42	359 12	42 26
37	Fides	Luther	Oct. 5, 1855	2,642	1568.64	175	3 7	8 13	66 8
38	Leda	Chacornac	Jan. 19, 1856	2,740	1656.58	155	6 58	296 31	100 48
39	Lætitia	Chacornac	Feb. 8, 1856	2,771	1684.84	111	10 21	157 23	2 11
40	Harmonia.....	Goldschmidt.....	Mar. 1, 1856	2,268	1247.45	046	4 16	93 33	0 58
41	Daphne	Goldschmidt.....	May 22, 1856	2,400	1358.30	0.202	15 48	180 9	230 24
42	Isis	Pogson.....	May 23, 1856	2,440	1392.20	225	8 35	84 30	318 0
43	Ariana.....	Pogson.....	April 15, 1857	2,204	1197.74	167	3 28	264 32	277 16
44	Nysa	Goldschmidt.....	May 27, 1857	2,424	1378.59	149	3 42	131 3	111 39
45	Eugenia	Goldschmidt...	June 28, 1857	2,716	1634.72	081	6 35	148 7	228 53
46	Hestia	Pogson	Aug. 16, 1857	2,518	1459.24	0.144	2 17	181 31	354 26
47	Aglaia	Luther	Sept. 15, 1857	2,883	1788.11	128	5 0	4 33	314 33
48	Doris	Goldschmidt.....	Sept. 19, 1857	3,109	1997.90	077	6 30	185 16	76 54
49	Pales	Goldschmidt.....	Sept. 19, 1857	3,086	1980.20	238	3 8	290 31	32 52
50	Verginia	Ferguson	Oct. 4, 1857	2,649	1574.43	287	2 48	173 34	10 2
		Luther	Oct. 19, 1857						
51	Nemausa.....	Laurent	Jan. 22, 1858	2,378	1339.33	0.063	10 15	175 39	190 14
52	Europa	Goldschmidt.....	Feb. 4, 1858	3,100	1993.47	101	7 25	129 59	102 4
53	Calypso	Luther	April 4, 1858	2,610	1540.45	213	5 8	144 16	91 34
54	Alexandra	Luther	Sept. 10, 1858	2,708	1627.31	199	11 47	313 52	293 40
55	Pandora	Searle	Sept. 10, 1858	2,769	1683.18	139	7 21	10 56	10 10
56	Pseudo Daphne	Goldschmidt.....	Sept. 13, 1858	2,583	1552.00	0.227	7 56	194 58	295 1
57	Mnemosyne...	Luther	Jan. 1, 1860	3,155	2047.10	106	15 4	200 9	53 25
58	Concordia	Luther	Jan. 10, 1860	2,693	1619.01	040	5 3	161 22	177 56
59	.....	Chacornac	Sept. 9, 1860	2,605	1501	196	6 36	167 9	337 52
60	Danae	Goldschmidt.....	Sept. 12, 1860	2,975	1875	163	18 17	334 19	340 9
61	Echo	Ferguson.....	Sept. 14, 1860	2,392	1352	0.185	3 34	191 58	98 28
62	Erato.....	Forster & Lesser..	Sept. 14, 1860	3,124	2019	169	2 13	126 41	26 14
63	Ausonia	Gasparis.....	Feb. 10, 1861	2,397	1356	128	5 45	338 3	268 7
64	Angelina	Tempel	Mar. 4, 1861	2,678	1602	125	1 20	311 2	126 28
65	Maximiliana ..	Tempel	Mar. 8, 1861	3,452	2343	141	3 29	159 9	254 37
66	Maia	Tuttle.....	April 9, 1861	2,654	1580	0.155	3 5	8 12	43 54
67	Asia.....	Pogson	April 17, 1861	2,582	1516	320	6 34	204 39	321 30
68	Latona	Luther	April 26, 1861	2,775	1688	204	7 58	44 50	346 00
69	Hesperia	Schiaparelli	April 26, 1861	3,075	1958	194	8 27	186 54	125 42
70	Panopea	Goldschmidt.....	May 5, 1861	2,499	1445	071	15 17	47 24	85 28?
71	Niobe.....	Luther	Aug. 13, 1861	2,756	1671	0.173	23 18	316 18	221 59
72	Feronia	Safford.	Feb. —, 1862	2,145	1148	0.119	5 23	208 1	329 22
73	.....	Tuttle.....	April 7, 1862	No elements have yet been published.					

[It will be seen that we have added to the original list three asteroids discovered since the middle of 1861, for an account of which we are indebted to Professor Hubbard, of the National Observatory.—*Sec. Smith. Inst.*]

DIRECTIONS FOR OBSERVING THE SCINTILLATION OF THE STARS.

BY CH. DUFOUR,
PROFESSOR AT MORGES, SWITZERLAND.

TRANSLATED FOR THE SMITHSONIAN INSTITUTION, FROM THE "REPERTORIUM FÜR METEOROLOGIE,"
ETC : DORPAT, 1859.

EVEN to the most recent times the scintillation of the stars has not formed the subject of any series of observations. We find here and there, it is true, some isolated observations, and a few persons have proposed different explanations of this phenomenon, but as yet no course of investigation had been seriously prosecuted. I may claim to be the first who undertook a labor of this kind. My observations at Morges in 1852 were at first but a succession of attempts, but from 1853 to the present moment I have allowed no evening, when the stars could be seen, to pass without carefully observing the scintillation. And now, after the dedication of six years to such inquiries, I feel authorized to pronounce that this study is important, and well deserves to occupy a place among meteorological observations.

But in order that the results may be general and more complete, it is desirable that systematic observations analogous to those which I have undertaken should be prosecuted elsewhere in other climates and under varied meteorological circumstances. There can, at present, but four stations be counted where I am justified in hoping that this inquiry has been entered upon and will be persistently carried on:

1. Morges, Switzerland, $46^{\circ} 30'$ north latitude, $4^{\circ} 9'$ east longitude from Paris. Since 1853 I have taken at this station nearly 24,000 observations of scintillation. The principal results thus far obtained from these numerous observations have been published either in the "Comptes Rendus" of the Academy of Belgium, or in those of the Academy of Paris, or in the Notices of the Astronomical Society of London, or in the Bulletins of the Vaudoise Society of the Natural Sciences. I propose soon to communicate some of these observations to the "Repertorium," &c., as a sequel and complement to the present directions:

2. The great St. Bernard, in the Alps, at an altitude of 2,480 meters. The monks, who pass the whole year in these elevated regions on the borders of perpetual snow, have consented to continue

the observations which I began there in the summer of 1856, during a sojourn amongst them.

3. Cairo, where Mahmoud Effendi, director of the observatory, has commenced or will immediately commence a series of observations analogous to that at Morges.

4. Peak of Teneriffe, where Mr. Piazzzi Smyth, director of the observatory of Edinburg, has already on one occasion spent several months with a view to scientific inquiries. He has promised me that, if, as he hopes, it shall be in his power to continue his researches on this isolated mountain, the scintillation of the stars will be a subject which will engage his particular attention.

Four stations, however, are but a small affair for the whole surface of the globe; among others, there are certain climates and countries with regard to which no information is accessible, for example:

The torrid zone.—There is on this zone no point of observation. The Peak of Teneriffe approaches it more closely than any other, but it would be important to know how the stars scintillate in the view of an observer situated between the tropics, in the hottest and probably the most humid countries of the globe.

The southern hemisphere.—Observations made beneath the skies of the other hemisphere would also possess great interest; for not only would the observer be placed in very different meteorological conditions, but he could observe certain stars which are always invisible to us, among others, Achernar and Canopus. The beautiful stars of that hemisphere, Sirius and Rigel, which we see only in winter, are visible to the south of the equator during the hot season; they pass, moreover, nearer to the zenith. It would be interesting to see how the scintillation is modified by this assemblage of circumstances.

The boreal regions.—The countries, however, which would afford the best opportunities for valuable observations are those situated to the north. It would be of consequence to know how the stars scintillate during the cold and serene nights of Siberia, or even of Russia, in Europe—what appearance they present in this respect on the polar seas during those long nights which last for several consecutive months. Hence, I particularly commend this study to the numerous savans who live in Russia, who, from Dorpat to Archangel, from the borders of the Frozen ocean to the shores of the Black sea and the Caspian, might collect a numerous series of important observations.

I commend this study also to explorers who may be called to pass entire winters amidst the ices of the pole. I greatly regret that my own observations did not commence ten years sooner, as I might have had the opportunity of pointing out this line of inquiry to the numerous navigators who have traversed the polar seas in search of Sir John Franklin and been imprisoned whole winters by the ice. Such expeditions may be, and probably will be renewed. I take the liberty of calling the attention of these future explorers to the scintillation of the stars as a department of research which may prove in their hands fertile in interesting results.

But to save observers from fruitless trials, and to place at their service the experience which I have acquired from the numerous observations made at Morges, as well as to render the indications of one observer comparable with those of another, I think it proper to recommend the following instructions:

1. *Manner of observing.*—I have tried different scintillometres, all those indicated by Arago, and even a new one proposed by myself; but I have come definitively to the conclusion that for observing, none of them are equal to the naked eye.

It is easy, when one is a little accustomed to it, to judge with sufficient exactness whether one star scintillates more than another, and the scintillation may be indicated by a number, as in meteorology we mark by a number the state of the sky or the force of the wind. For my own use I have designated by 0 an absence of scintillation, and by 10 one of those strong scintillations which are seldom witnessed except when the star is near the horizon, when it appears to scintillate, change color, or even disappear. With a little practice, we succeed even in distinguishing degrees between the scintillations 0 and 1 and 1 and 2, &c.; we can then appreciate the scintillation with more exactness, and designate it, for instance, by 0.4, 1.6, &c. It is scarcely possible, however, to carry these subdivisions of gradation beyond the scintillations 4 or 5.

This is my own scale; another observer may frame such an one as he thinks suitable. The figures may vary, but the relations will remain essentially the same; thus my brother Marc, who has been engaged nearly a year in observing the scintillation, employs a much lower scale, yet we are generally in accord as to the relation of the numbers; we are always so in regard to the question whether one star scintillates more or less than another, and whether the scintillation during one evening is stronger or more feeble than during another evening. Now, this is the important point, for since all the observations cannot be made by the same person, it will be often difficult to know if the scintillation is exactly of the same intensity at Pulkova, at Archangel, on the Peak of Teneriffe, or at Morges.

I shall show presently, however, how these inconveniences can be obviated within certain limits. But in all cases, by following the mode of observation just indicated, it will be possible to know how at each of these stations the scintillation varies from one day to another, and whether this variation appears to bear a relation to any meteorological perturbation.

It is scarcely necessary to add that the height of the star which scintillates must always be known, or at least be capable of determination. But in place of observing this height directly, it is more simple to calculate it from the hour of the observation, and, to abridge the calculation, a table may be prepared in advance, indicating, with reference to the latitude of the station, the height of the stars observed at different sidereal hours. My own table gives these heights for Morges from half hour to half hour. This table answers the purpose, for in the interval of a half hour one may interpolate with all the necessary exactness, since it is useless to know the height of a star

within a few seconds; an approximation of a degree or half a degree suffices.

2. *Reduction of observations.*—It is well known that, all things besides being the same, the scintillation is so much the more feeble in proportion as the stars are nearer the zenith, whence it would seem impossible to compare observations if they have not been all made at the same height.

But, as I shall explain in a subsequent note, in comparing a great number of observations made under highly favorable conditions, inasmuch as there had been no apparent atmospheric perturbation, neither for some days preceding nor following, I have ascertained that the scintillation really decreases when the star approaches the zenith, and that for any height whatever the scintillation is sensibly proportional to the product obtained by multiplying the thickness of the stratum of air which the luminous ray traverses by the astronomical refraction for the height under consideration.

Let us designate this product by P. By representing the height of the atmosphere by 1, and counting the refractions by sexagesimal seconds, we find that for different heights the values of P are:

Height of the star.	Value of P.	Height of the star.	Value of P.
20°	444	55°	49.7
25	286	60	38.7
30	198	65	30.0
35	143.1	70	22.5
40	106.9	75	16.1
45	81.8	80	10.4
40	63.6	85	5.1

These numbers sufficiently well represent the gradation of the normal scintillation at Morges, when the height of the star above the horizon varies from 20° to 75°. Below 20° the calculated values do not correspond with the observations, but the proximity of the horizon affords a sufficient explanation of this deviation, while as regards the stars situated at a greater height than 75°, their scintillation is in general so feeble, that the smallest error in the appreciation of it modifies very considerably the relation of the numbers.

In this way, when we have observed at a height of 60° a scintillation of 1.6, and would know the scintillation of the same star under the same conditions if it had been but at 45° above the horizon, we should have :

$$\text{Scintillation at } 45^\circ = \frac{1.6 \times 81.8}{38.7} = 3.4.$$

3. *Errors to be avoided.*—Often, from one day to another, the scintillation varies considerably, but it augments or diminishes in a proportional manner for all the stars, except perhaps for those which, near the horizon, have always a strong scintillation, and aside also from accidental causes which may momentarily modify it. Among these accidental causes we may cite first the crepusculum which almost always considerably augments the scintillation, and secondly the neighborhood of clouds. It was M. Kæmtz, I believe, who first observed that the scintillation is greater when there are clouds in the

sky, especially clouds chased by the wind. The fact is certain. I have recognized its truth in thousands of circumstances, and I am not aware of having detected a single exception. In view of this, I do not say that observations made on stars in the vicinity of clouds are to be rejected, for these observations may also have their importance, but it is necessary that regard should be had to this circumstance which sensibly modifies the results.

As the light of the moon interferes with observations, those made at full moon must necessarily be less exact than those made on moonless nights.

4. *Comparison of observations made by different persons.*—Here is the delicate point. What has been said may serve for the study of the phenomenon of scintillation when a single person is charged with making all the observations. But when there are several, how shall we know that the scintillation which one observer designates by 2.5 is equal to that which another designates by 2.5?

This uniformity I believe it impossible to realize; and, unless the observers were formed in the school of more experienced observers, I am certain that it is not to be attained. Yet I shall proceed to show that there is a mode of recognizing whether, in absolute value, the scintillation is stronger at one station than at another station.

At Morges, on nights of strong scintillation the stars in the zenith have a very distinct scintillation. During nights of average scintillation, the scintillation of stars at a very high elevation is weak, though always appreciable. But, on nights when scintillation is weak, the stars near the zenith have none at all. And the weaker the scintillation during an evening, the more extended is the spherical canopy of which the zenith is always the centre, and which comprehends the stars whose scintillation is inappreciable.

I have sometimes observed that at a time of very weak scintillation the stars ceased to scintillate when they had ascended 42° above the horizon, but I have never seen scintillation entirely cease in stars at a lower elevation; and yet, according to Arago, this sometimes happens. He cites, among others, the observations of M. de Humboldt, who says: On the banks of the Orinoco no scintillation can be distinguished in the stars, even at 4° to 5° above the horizon. Le Gentil asserted, that at Pondicherry, in the months of January and February, the stars have no scintillation. Beauchamp writes to Lalande that at Bagdad the stars, when they had ascended 45° above the horizon, no longer scintillated.

Garcin announced in 1743 that at Bender Abassi, on the shores of the Persian gulf, in spring, summer, and autumn, the stars showed no scintillation; it was in winter, only, that a slight one could be discovered. According to Humboldt, scintillation is, in general, not perceptible at Cumana when the stars are at an elevation of 25° , &c.

Assuredly, I have never witnessed at Morges, during six years, so weak a scintillation, but in thus discriminating the heights at which the stars cease to scintillate, the observations which I have made are susceptible of being compared with those of Le Gentil and Humboldt. Hence I particularly invite the attention of observers to this point,

as probably affording the best means of comparing the values obtained at different places on the globe.

While scintillation is readily appreciable for stars of the first magnitude, it is much less so for those of a lower grade; and thus in considering the stars as they become less and less brilliant, we arrive finally at those in regard to which scintillation is wholly unappreciable; though this limit itself varies from one day to another, according as the general scintillation is stronger or weaker. Here, then, we have still another criterion for a comparison of the scintillation. It suffices to say to what degree of magnitude the stars appear to scintillate; and as we have seen that the height of stars above the horizon has a great influence on the intensity of the phenomenon, it will be always necessary to cite by name some of these stars, and to indicate, besides, what is their height above the horizon, or at least the hour of the observation.

5. *Variable stars*.—Of all the stars which I have observed, alpha of Orion is that whose scintillation has appeared to me most irregular, but we know that the brightness of this star is not always the same. Now, in regard to the variable stars, we know at most but the duration of their period, and hence their scintillation is also an interesting phenomenon for our study. It would be interesting, especially in relation to γ of the Ship, the singular variations in the brightness of which have so much surprised astronomers for 30 or 40 years past. Unluckily this star only begins to be visible at 31° of north latitude, and it is necessary to proceed nearly to the equator before it can attain an elevation of 30° above the horizon; that is, a height sufficiently great for the satisfactory study of its scintillation. This investigation must be resigned, therefore, to those who have an opportunity of observing the skies of the other hemisphere.

6. *Scintillation of planets*.—It is the general belief that the planets have no scintillation, or next to none. Yet Venus and Mars have often a very perceptible scintillation. In some rare instances I have even detected a slight scintillation in Jupiter and Saturn. It would be of some importance to those who seek to explain the phenomenon of scintillation to know whether, in fact, the scintillation of these planets is ever very distinct, and the inquiry may be properly recommended to those who may be placed in such physical circumstances as render the general scintillation unusually strong. Perhaps Jupiter and Saturn might then be seen to scintillate with great distinctness.

7. *Accidental observations*.—In order, finally, to complete the study of this phenomenon, it will be necessary not to neglect exceptional circumstances, among others the observation of scintillation in case of an aurora borealis, whether in regard to the stars which seem immersed in the light of the aurora or those situated in other regions of the firmament. During six years I have not been able to make, at Morges, any observation of this kind. As to observations of the scintillation by those stationed on mountain heights, M. Piazzi Smyth recollects that scintillation appeared very weak as observed from the summit of the Peak of Teneriffe, and I constantly realized the same

fact during my sojourn at the Great St. Bernard. Is it always the case?

8. *Accessory observations.*—That observations made upon the subject in question may be really valuable, it behooves us that they should be accompanied by meteorological observations as complete as possible. Let the indications of the barometer, the thermometer, and the hygrometer at least be noted, as well as the state of the sky and the force and direction of the wind. It is probable that in the localities where scintillation will be observed, meteorological observations will also be made and published; whence I presume it will not be devolving on observers any great increase of occupation if they be persuaded to combine the records which have been made for the study of meteorology with those collected for the study of scintillation.

There remain, doubtless, a number of other details, depending on the views of the observer and the circumstances in which he is placed—details which I omit because they will naturally vary with each individual. I am content with having indicated the principal subjects to which I would call the attention of observers, and whose importance has been disclosed to me by experience.

I may be allowed, in conclusion, to address to those who shall be disposed to observe the scintillation of the stars, particularly to those residing in any climate greatly differing from that of Morges, the earnest request that they will communicate to me a brief summary of their observations. That the results at which they arrive will be of the highest interest to me none can doubt, and the courtesy will be gladly reciprocated on my part by furnishing other details to such as may be induced to engage in these researches.

I may state, in addition to what has been said in the foregoing article on the subject of the planets, that I have seen Jupiter and Venus distinctly scintillate, the last particularly, on the 3d of January, 1841, when the weather was stormy and the barometer rapidly sinking. The feeble scintillation of the stars was, I remember, quite striking when I viewed them from the elevation of the Faulhorn.

I propose to give, in future numbers of the "*Repertorium*," various instructions for the observation of phenomena which are seldom the subject of investigation, such as the polarization of the light reflected by the atmosphere. In many phenomena this plays a more considerable part than is generally believed, and since, in observations upon Donati's comet, the assertion has been frequently made that its light was polarized, as was determined also by Arago with regard to the comets of 1819 and 1835, I take occasion to cite the following remarks of Brewster, which occur in the "*Comptes Rendus*" of the Academy of Sciences, XLVIII, 384: "I am not aware that those who have observed traces of polarization in the light of comets have noticed the direction of the plane in which it was polarized. Without such an observation, however, we cannot discover the cause. If the light is polarized in a plane passing by the sun, the comet, and the eye, we must infer that it is polarized by the *reflection* of the light coming

from the sun; if it is polarized in an opposite plane, the polarization may be due to the *refraction* of the atmosphere. If it is polarized *quaqua versus*, (on every side,) that may depend on three causes, viz: on the refraction by the surfaces of the object and eye-glasses; or on an imperfection in the annealing of the glass of which the lenses are formed; or on the circumstance that one or more of the lenses are compressed by the mountings. Supposing it to be an effect of the first of these causes, the openings of the object and of the eye-glasses should be reduced to a central band, which would eliminate the light polarized in an opposite plane, and would leave that which is polarized in a plane perpendicular to the direction. By turning the tube or the lenses the direction of the polarization would be changed. If the polarization is produced by a defect in the manufacture of the glass of the lenses, the existence of such imperfection will be rendered evident by exposing the lenses to the polarized light. If the observed polarization is owing to the reflection of the rays of the sun by the comet or its envelopes, the small stars will be seen more distinctly through it when the polarized light has been extinguished by one of Nicol's prisms."

L. F. KÄMTZ,

Editor of the "Repertorium."

SYNTHETICAL STUDIES AND EXPERIMENTS ON METAMORPHISM

AND ON THE FORMATION OF CRYSTALLINE ROCKS.*

By M. DAUBRÉE.

TRANSLATED BY T. EGGLESTON, FOR THE SMITHSONIAN INSTITUTION.

INTRODUCTION.

In varietate unitas (LEIBNITZ.)

ONE of the first and most important problems which geology has been called upon to solve is to determine what, in the formation of the solid crust of the globe, is the part to be assigned to aqueous and that which ought to be attributed to igneous action. The question, although it has been a long time under discussion, has not yet been definitely settled; it has even been complicated, since, in studying more rigorously the different strata, there have everywhere been found those which unmistakably exhibit evidence of a double origin. Was it at the time of their formation that these ambiguous strata acquired their double characteristics, or was one of these characteristics acquired after the other, and, in the latter case, how can such a succession of effects be accounted for? Such are the subjects, the study of which constitutes, in its greatest generality, that part of geology which has been called *metamorphism*.

When the influences which the interior regions of the globe exercise on the surface show themselves by daily phenomena, such as hot springs, eruptions of volcanoes, earthquakes, or by effects of which man has not been the witness, but of which he finds stupendous traces, such as the eruption of rocks and the upheaving of mountain chains, it is a subject full of interest, and in which every one is ready to engage. But when these influences have produced only slow modifications invisible, inaccessible to direct observation from the depth at which they have taken place, and are without doubt still going on, it is easily conceived that they excite incomparably less interest, and, moreover, that they present peculiar difficulties of investigation. If, however, we consider that these great transformations were carried on over a large part of the earth's crust, and that, according to all probability, their importance increases from the

* Annales des Mines. 5 series, vol. 16, pp. 155 and 393.

surface downwards to the point where they become predominant in the depths ; that, in fine, they are in intimate connexion with all the other manifestations of the internal activity of the globe, it must be admitted that their study well merits the most serious attention.

It is this study of a phenomenon, so far as it is possible for us to understand it at this day, that I present in this work. I shall divide it into three parts : the first will be devoted to the history of the question ; the second to the exposition of those facts which can be considered as certain, and which the theoretical explanations which form the subject of the third part, ought to explain.

I have given considerable development to the historical part. To signalize the efforts by which the theoretical ideas which we now possess have been gradually acquired, is not only to render a just homage to those who have illuminated science by their works, but also to present a salutary warning against illusive speculations. Impulses of the imagination in the domain of geology are so much the more to be deprecated, as even the induction founded upon observation is here most frequently without means of verification.

Although the historical citations are numerous, there are still many gaps ; but not to too much extend this sketch, I should say that I restrict myself to works of a fundamental character.

PART FIRST.

HISTORY.

CHAPTER I.

STATE OF GEOLOGY AT THE APPEARANCE OF THE HUTTONIAN SYSTEM.

During the last two centuries there have been men who, without being what we now call geologists, have advanced such remarkable ideas concerning the system of the globe, that they have had an incontestable influence on the works of those who, since their time, have specially studied this part of science. Thus Descartes considered the earth as a sun cooled on its surface, preserving in its interior a *central fire*, which was the cause of the return of the waters of infiltration towards the surface, of the presence of metals in veins, and of the dislocations of the solid crust.*

From the same hypothesis of an original fluidity, Newton deduced

* *The Princip'es of Philosophy* of Descartes first appeared in 1644, (Latin edition of Amsterdam.) The acute genius of Descartes divined, as it were, several general facts, which observation has since then established.

“Feignons que cette terre a été autrefois un astre—en sorte qu'elle ne différât en rien du soleil, sinon qu'elle était plus petite. Au-dessus de la croûte intérieure fort pesante, de laquelle viennent tous les métaux, est une autre croûte de terre moins massive qui est composée de pierres, d'argile, de sable et de limon. Ce n'est pas le seul argent-vif qui peut amener soit les métaux de la terre intérieure à l'extérieur les esprits et les *exhalations* font le semblable aux regards de quelques-uns, comme le cuivre, le fer et l'antimoine ”— (French edition of 1668, IV part, §§2, 44 and 72.)

by calculation the flattening which the terrestrial spheroid* should present, and this idea was also adopted by Halley.

Still later, Leibnitz, stimulated both by the ideas of Descartes and the very judicious observations of Stenon, published a work which, notwithstanding the inevitable paucity of the facts on which it was founded, bears the stamp of the genius which conceived it.† It was, without doubt, from this source that the illustrious author of *Les Epoques de la Nature* drew his most profound inspirations;‡ but the works of Buffon, although exciting the attention in the highest degree, were not calculated to convince, but to strike the imagination very forcibly, and thus provoked precise observations destined to solve the doubts which they had raised.¶

It was not in reality until the end of the last century, at the same epoch when there was opened up for chemistry so new an horizon by the discoveries of Lavoisier, Schùle, Priestley, and Cavendish, that the history of the globe began to disengage itself from preconceived opinions, and that observation began to take the place therein which belonged to it. The exact facts which men endowed with a genius for observation, such as Agricola, Bernard de Palissy, and Stenon had before signalized, were merged in an ocean of hypothesis. The ideas concerning the history of the earth, published by Linnæus, the rival of Buffon, as historian of nature, presented only a summary of the facts known and the ideas in vogue at that period.§

De Saussure,¶ Pallas,** and Werner inaugurated, by works nearly contemporaneous, the era of *positive geology*, and all these disapproving emphatically of the boldness of Buffon, opposed his ideas, even those which were well founded.†† Of these savants, all eminent observers, the two first were sparing of their inductions. But Werner went further: he tried to analyze, to classify, and to co-ordinate facts, and to describe them in definite and precise language, and gave to the science the name of *geognosy* in contradistinction to geology,

**Principia Mathematica Philosophicæ Naturalis*, 1667.

†Leibnitz gave a sketch of the dissertation, known under the name of *Protogæa*, in the *Acta Eruditorum*, in the month of January, 1693; but it was not until thirty-three years after his death, in 1749, the very year that Buffon published the first three volumes of *Natural History*, that the whole *Protogæa* was published.

‡*La Theorie de la Terre* is dated 1749. *Les Epoques de la Nature* appeared nearly thirty years later, in 1778. Before Buffon, Mairan, having a special object in view, had developed the idea of a central heat.

¶The influence which Buffon exercised over the progress of geology has been deservedly acknowledged by Mr. Elie de Beaumont. —(*Leçons de Géologie Pratique*, p. 24.)

§*Systema Naturæ*, 1775.

¶De Saussure was born in 1740. He commenced his travels in 1760, and published in 1779 the first volumes of his *Voyage dans les Alpes*, where he has recorded so many important facts which have served, as it were, for the foundations of geology.

**Pallas published in 1777 his observations on mountains, and a few years after the narrative of his long travels.

††These three great observers believed, as did Linnæus, that the strata were formed by aqueous action, and that the volcanic phenomena were simply local accidents. De Saussure declared, in 1798, after having visited Auvergne, that he could not admit that basalt was of igneous origin, much less could he admit this origin for granite.

which up to that time had been little else than an assemblage of conjectures.*

To go back to the doctrines which were in vogue at the time when the idea of metamorphism appeared, we ought first to call to mind the fundamental principles of the celebrated professor of Freyberg, especially those which have disappeared in the progress of subsequent discoveries. According to Werner, granite and the other crystalline rocks are marine deposits, as much so as the stratified and fossiliferous rocks. At a remote period the different materials from which the strata were derived were either dissolved or held in solution in the ocean. It was from this *chaotic* ocean that all the strata were, one after the other, precipitated, some by chemical and others by mechanical means. This later mode of formation distinguished the crystalline from the sedimentary rocks. According to this system, granite, which composes the highest peaks of the globe, and which also supports the regularly stratified deposits, was formed first, together with gneiss and the crystalline schistose rocks which are associated with it. As no organic remains are ever found in them, the formation of these deposits necessarily preceded the existence of animals and vegetables, whence they received the name of primitive; afterward the sea became shallower, and sank away into the interior cavities of the earth.† During this second period a chemical precipitation of the silicates continued to take place, but at the same time mechanical deposits began to be formed. By this double process, at once chemical and mechanical, the intermediate or deposits of *transition* which contain crystalline associated with sedimentary fossiliferous rocks were formed. During a new period of the decrease of the waters the *secondary* strata were deposited, the highest mountains of which, it was then thought, never reached the altitude of the peaks of the older deposits. They are often in horizontal beds and abound in organic remains. During their consolidation, the strata experienced ruptures from which resulted cavities of all dimensions. The water, in leaving these cavities, incrustated the long fissures, through which it flowed, with the different materials it held in solution, and thus gave rise to *metallic veins*. Such, according to Werner, is the origin of all the strata composing the crust of the globe, not including, however, the alluviums, the vegetable earth, and the products of volcanic fire, which he attributed to the conflagrations of the beds of carbonaceous combustibles. He explained the intimate relation which evidently exists between the primitive and secondary deposits, both in their mineralogical relations and in their association, by supposing that the composition of the ocean, and consequently the nature of its deposits, have varied from the time when granite was precipitated from it, sometimes by a gradual and sometimes by a

*By the aid of positive facts, which Füchsel had previously, in part, described in 1762, Werner proved that a kind of chronology of the physical events which had contributed to the formation of the globe could be established.

†Leibnitz had already tried to explain the drying up of continents by the retreat of the water into vast interior voids, which he attributed to ancient cavities of gaseous inflation produced at the time of the primitive fusion.

sudden process*. In short, according to the system of Werner, all the strata were produced at their origin as they now exist. The internal activity of the globe is completely disregarded as well in respect to the formation of crystalline rocks and metalliferous deposits, as to its being the cause of the dislocations undergone by the stratified deposits of all ages.

CHAPTER II.

HUTTONIAN SYSTEM.

While the teachings of Werner began to captivate general attention and excite the enthusiasm of his pupils, thanks to the graces of speech of the master and to the power of the method with which the facts then known were brought together, another and a very different doctrine arose in Scotland. Gifted with a genius for observation not less eminent than the professor of Freyberg, James Hutton came to opposite conclusions on certain fundamental phenomena, and these two antagonistic schools were simultaneously established. As far back as 1785 Hutton published his *Theory of the Earth*.† Ten years later, after having made several journeys in Scotland to collect new observations, he developed his ideas in a more voluminous work under the same title. But what contributed more than anything else to make Hutton's doctrine known was the work of John Playfair,‡ his disciple and friend, who was at the same time a mathematician, a geologist, and a distinguished writer. His talent of exposition and elegance of style vigorously sustained the new ideas, as well against the violent attacks of a small number who accorded to them a serious consideration, as against the disdainful indifference of the majority, who regarded them as unfounded. The importance of the works of Hutton and of Playfair, in which, for the first time, we find certain fundamental ideas of modern geology established and developed, and in particular the principle of metamorphism, obliges me to give here their leading propositions, as I have done for those of Werner. This is, in

* When the solution covered the whole of the globe, and was of great depth, it was tranquil and pure. For this reason the first rocks were exclusively crystalline. Afterwards, when the level of the sea was lowered and the earth appeared above it, currents exercised a greater influence and destroyed a part of the pre-existing masses. On the other hand, atmospheric agencies attacked the emerged rocks. It is thus that mechanical deposits were formed, and even became abundant.

† *Theory of the Earth, or an Investigation of the Laws Observable in the Composition, Dissolution, and Restoration of Land upon the Globe*; by James Hutton, M.D., F.R.S. Read the 7th of March and the 4th of April, 1785, before the Royal Society of Edinburgh; 96 pages, in 4to. A second paper on the same subject appeared in 1786. The second edition of the work is entitled, *Theory of the Earth, with Proofs and Illustrations. In four parts.* Edinburgh, 2 vols., in 8vo., 1795.

On the other hand, Werner published his *Treatise on the Characters of Minerals*, in 1774, at the age of twenty-four years. Soon after, about 1780, he began to develop in his lectures the principles of *Geognosy*. His *Classification and Description of Strata* dates 1787, and his *New Theory of the Formation of Veins* in 1791.

‡ Playfair's *Illustrations of the Huttonian Theory of the Earth.* Edinburgh, 1802.

reality, the only way to do justice to the author of these fundamental discoveries and to his successors. We shall follow the order adopted by Hutton and his commentator.

The author remarks in the outset that certain deposits, which he qualifies as primitive, appear to have been formed in the same manner as the recent sedimentary strata. It is thus that the beds of the Alps, considered as primitive, cannot be anterior to the existence of vegetables, since they contain numerous remains of them in the form of mineral combustibles. Furthermore, other crystalline deposits contain beds consisting of sand and pebbles; they were, therefore, formed from the detritus of pre-existing deposits; for if we should admit, with Deluc, that quartz sand is a chemical deposit, we cannot explain why there is none existing in the midst of the most crystalline masses, particularly in granite and metalliferous veins. The compactness of these rocks, which are at the same time sedimentary and crystalline in structure, could only result from the action of heat and from softening. According to Hutton, if a foreign substance in a state of solution had penetrated the pores of the rock, the liquid would have of necessity left certain cavities. The masses of lamellar limestone which often accompany this species of crystalline rock also supply him with an argument; for he assumes, *as beyond a doubt*, that limestone, in which Black had just discovered carbonic acid, could only retain its gaseous element at a high heat when the rock was at the same time submitted to great pressure. He adds that, under these circumstances, carbonate of lime can even be melted. We know that this bold conjecture was afterwards confirmed by the experiments of his most celebrated disciple.*

The mode of occurrence of the different species of mineral combustibles contributed to the support of this same theoretical idea. After having remarked that, in the Isle of Sky, ordinary lignite changes, under the basalt which covers it, into a compact combustible, with a brilliant fracture like coal, Hutton concluded, as Buffon had previously supposed, that coal had the same origin as lignite; that the beds of coal and deposits of bitumen result from the transformation of vegetable and mineral matter by heat and under the influence of pressure.

In the generalization of this idea, he came even to include graphite in the series of products derived from the burial and transformation of organic bodies. Thus, by an idea entirely new, the illustrious Scotch geologist supposed water and the internal heat of the globe to have successively co-operated in the formation of the same rocks.

It is a characteristic of genius to comprise, under a common origin, very dissimilar phenomena. Subterraneous heat, according to Hutton, not only consolidated and mineralized the strata at the bottom of the sea, but it had, moreover, raised and depressed beds which were originally horizontal. Saussure had then just observed the elevation

* Sir James Hall, whose conclusions on the simultaneous action of heat and pressure will be noticed presently.

and subsequent depression of the celebrated conglomerates of Valorsine, without, however, giving an opinion as to the cause of the phenomenon.* Another discovery, due also to Hutton, had an important influence on geology; I refer to the eruptive origin of granite. In the study of this rock in his own country, especially at Portsoy and in Glen-Tilt, he perceived that it forms veins in the surrounding masses, showing that it was injected in a fluid state; and, further, that its mineralogical nature indicated the action of heat. It is, however, just to add that Strange, a compatriot of Hutton, had just come to the same conclusion.† The rocks known to the English under the names of *trap*, *toadstone*, and *whinstone*, have also been injected in regions where there were no indications of volcanoes.‡ Hutton proves this by the numerous examples which he had observed in Scotland, a country eminently favorable for this kind of study. He investigated, besides, the cause of the difference between *these subterranean lavas* and those thrown out from volcanoes, in which neither zeolites nor calc spar are found. Here, too, it is heat under pressure, which appears to him to explain this difference.¶ To the author of these fundamental deductions, metallic veins, as Descartes had previously suspected, could only be injections of melted masses.

In short, Hutton explained the history of the globe with as much simplicity as grandeur. The atmosphere is the region where the rocks decompose; their detritus next accumulates at the bottom of the sea. In this great laboratory the shifting material, under the double action of the pressure of the ocean and of heat, is mineralized, and transformed into crystalline, having the appearance of the primitive rocks, which are afterwards to be raised by the action of this same internal heat, and again demolished in their turn. The disintegration of one part of the globe serves, therefore, for the continual reconstruction of other parts, and the continuous destruction of the inferior deposits produces, without cessation, rocks in a state of fusion, to be injected in turn through the sedimentary deposits. It is a system of destruction and of reconstruction of which it is impossible to conjecture either the commencement or the end. As in the planetary motions, where the perturbations correct themselves, we see continual changes, though restrained within certain limits, of such a character that the globe shows no signs either of infancy or of old age.

* The observations of Stenon on the same subject, which Elie de Beaumont has brought to light, (*Annales des Sciences Naturelles*, vol. xxv, p. 137 to 183,) appear to have been entirely forgotten at that time.

† *Transactions*, vol. lxxv, p. 5, 1775.

‡ We must, however, remember that Desmarests had already long ago proved the igneous origin of the basalt of Auvergne, of Italy, and of the northern coast of Ireland, (1768-1771.)

¶ Speaking of the very conceivable error which Hutton committed on the origin of these calcareous infiltrations, I cannot help remarking with what penetration Spallanzani, another great observer of nature of the same period, recognized the mixed origin of the amygdaloid rocks of the Euganean Hills. The disposition of their cavities satisfied him that the rock had been melted, at the same time that the presence of carbonate of lime in them result from infiltrations.

In considering this action as a *continuous* phenomenon, Hutton obscured his beautiful conception, but he rendered an immense service in showing that natural agencies which operate under our eyes ought to serve as a sufficient explanation of the history of the globe, and that we need not have recourse to other means of action than those which nature now uses, while all the other systems, on the contrary, suppose occurrences which have no analogy with what now takes place. Thus Hutton is really the founder of the prolific principle of the transformation of sedimentary rocks under the action of heat.

However, we shall see, further on, that there are a great many exceptions to be made to such absolute conclusions.* Like most men of genius who have opened new paths, Hutton, it must be admitted, exaggerated the range of the ideas which he originated. We cannot, however, reflect without admiration on the profound penetration and the rigor of induction of this clear-sighted man, who, at a period when there were very few precise observations, was the first to recognize the simultaneous action of water and heat† in the formation of the strata, and imagined a system which embraces the entire physical history of the globe. He laid down principles which are now universally admitted, at least so far as they are fundamental.‡

CHAPTER III.

SUCCESSORS OF HUTTON.

Even before the publication of Hutton's doctrine an Italian observer brought to light a fact from which he inferred that recent igneous action may transform sedimentary rocks, even such as are most modern. As early as 1779 Arduino|| announced in the clearest

* Iron pyrites, so abundantly distributed, as well as all the minerals of veins, appeared to him to be the productions of the dry way; it served him as a proof of the action of heat which the strata had undergone. He extended this observation to the flints of the chalk, the solidity of which contrasts with the physical state of the silica known in laboratories.

† In the cosmologies of Leibnitz and Buffon the central fire is supposed to have acted only at the origin of the globe, before the formation of deposits. Combating certain ideas which were in vogue, Hutton clearly shows that the internal heat of the earth can exist without any interior inflammation or combustion.

‡ Hutton, born in 1726, made observations in the wildest parts of Scotland, and meditated more than forty years before publishing his first sketch. The sight of the veins of granite of the valley of Glen-Tilt struck him as with a ray of light. He himself discovered a larger part of the facts upon which he based his theories.

|| *Osservazioni Chimiche sopra Alcuni Fossili*; Venice, 1779. After having been employed at the mine of Montieri, in the Maremme of Sienna, Arduino went to live at Vicenza, where he was a surveyor. (Letters of Fortis on Vicentin.) Pazini has noticed his work in the *Bulletin of the Geological Society of France*, vol. iv, p. 112.

"It appears to me," says Arduino, "that magnesia is only lime, possessed of peculiar properties consequent upon subterraneous igneous action." "I have only found it in the great raptures of the calcareous beds of our mountains."

It is extremely remarkable that this new and bold assertion was made during the very year that magnesia was discovered by the experiment of Retzius and Bergmann to be an earth distinct from lime. It was not until eleven years later, in 1791, that Dolomieu called attention to a peculiar kind of magnesian limestone which he had noticed in Southern Tyrol.—(*Journal de Physique*, vol. xxxix, p. 3.) The next year Theodore de Saussure published the analysis of this rock, and gave it the name of *dolomite*, which it has still preserved.—(*Journal de Physique*, vol. xl, p. 161.)

manner the idea that the dolomites of Lavina, in the Vicentine, had been formed at the expense of secondary limestone. The brechiform nature of the rock caused him to think that the limestone had been broken, and that the modifying and igneous agent had afterwards penetrated from below, through the fissures. Twenty years later, an English geologist, Dr. G. Thomson,* after having examined the blocks of crystalline limestone from Mt. Somma, so rich in various minerals, was led to consider them as Apennine limestone which had been modified by heat, and propounded the question whether the marble of Carrara had not had the same origin.

But what at that time contributed most of all to the support of the newly-established principle of the transformation of rocks was a series of experiments made by Sir James Hall.† They were suggested, he says, as far back as 1790 by Hutton. This was, properly speaking, the first time that any one had seriously tried to introduce experimental synthesis in the study of geological phenomena by bringing to bear upon it something else than the observation of facts, as nature presents them, and chemical analysis. Hall was encouraged in this research by the frequent presence of nodules of crystalline limestone in trap. He proved that under a definite pressure carbonate of lime can at a high heat retain its carbonic acid, and that the combined effect of heat and pressure is to agglutinate this substance into a solid mass, which is sometimes crystalline.

He perceived also that wood under the same conditions changes into a kind of lignite. Although this was the demonstration of a fact very simple in appearance, Hall devoted not less than three years to his experiments, which were more than one hundred and fifty in number; this gives an idea of the difficulties to be encountered in operating with heat under high pressures.‡

Perhaps no country presents more beautiful and more numerous examples of the intercalation of eruptive rocks than certain regions of Scotland. It is naturally in a country broken up in this way that the first notions of this kind of phenomenon should be obtained. The important memoirs also, published by Macculock,|| which will hereafter be classic, furnished new arguments for the support of the theory with which the same country had inspired Hutton. It may well surprise us that ideas for the most part profoundly correct, and supported at the time by many precise observations, should have remained so long disregarded or perhaps unknown on the continent. Even at Edinburg, Jameson, an ardent disciple of Werner, controverted doctrines which might be called Scotch with arguments bor-

* On the nature of the marbles thrown out from Vesuvius and on the possible extent of volcanic influences. — *Bibliothèque Britannique*, vol. vii, p. 40, 1798. Brieslach adopted and defended this opinion.

† Account of a series of experiments showing the effects of compression in modifying the action of heat. Read June 3, 1805. — *Edinburg Philosophical Transactions*, vol. vi, 1812.

‡ Bucholz has announced that crystalline carbonate of lime can be obtained by calcination under ordinary pressure.

|| *Description of the Western Islands of Scotland*, 3 vols., 1819.

According to Macculock, amphibolic schists appear to result from the decomposition of clays.

rowed directly from the school of Freyberg. In France, Dolomieu, Giraud-Soulavie, Faujas-Saint-Fond, who since the end of the last century earnestly combatted the hypothesis of Werner on the aqueous origin of basalt, and d'Aubuisson, whom the study of Auvergne obliged a little later to adopt an opinion opposed to that of his master, gave but little attention to ideas towards which it would seem they ought to have felt themselves strongly attracted. Cuvier, in the report on the progress of natural science since 1789, which was published in 1808, only cites Hutton to speak with great doubt of the opinion of this savant on the intervention of heat in the origin of basalt.* "How," asks Cuvier, "are we to resolve the problems of the history of the globe with the forces of nature which we know to be at present in existence?"†

It is, in reality, only since 1815, after the relations of Great Britain with the continent were renewed, that the labors of Hutton and his disciples began to be known to the rest of Europe; it was then only that there appeared in Paris a translation of the works of Playfair, which had been published thirteen years before in Edinburg.

A few years after, Dr. Boué,‡ who had studied geology in the Scotch capital, and who had explored Scotland, contributed to propagate these ideas. Moreover, establishing himself on the modifications observed in the neighborhood of the plutonic rocks of the Isle of Sky, at Monzoni and elsewhere, he put forth the idea that gneiss and other crystalline rocks contiguous to the granite are only sedimentary strata transformed by ancient eruptions of that rock. Doubtless this was greatly to exaggerate the extent and power of the phenomenon; certain geologists, however, have retained this theory to the present time.|| After having visited Scotland, Mr. Necker also became an interpreter of the principal views of Hutton.§

Sir Charles Lyell did his part, by elegantly written works, to make known the Scotch doctrine. As early as 1825 he summed up, under

* Edition in 8vo, p. 171-2.

† Report before cited, p. 180. This last phrase is a criticism of the other principle which Hutton tried to establish, that ancient phenomena appeared to be due to the action of actual causes sufficiently prolonged.

"This progression is too slow to be immediately perceived by man; the most remote fact that experience can furnish ought to be considered as the momentary *increment* of an immense progression, which has no other limits than the duration of the world. Time takes upon itself the function of integrating the parts of which this progression is composed."—*Playfair*. Dolomieu was entirely opposed to this opinion.

"It is not time, but force that I invoke. Nature demands of time the means of repairing disorder, but it receives from motion the power of overthrowing."—(*Journal de Physique*, vol. ii, 1792.)

‡ Tableau de l'Allemagne, *Journal de Physique*, 1822, Mémoire Géologique sur le sud-ouest de la France. (*Annales des Sciences Naturelles*, vol. ii, p. 387, 1824) Mr. Boué tried to show the eruptive origin of granite, of porphyry, and of granstein in the different parts of Germany. He based his principal conclusion on the excellent observations of Palassou in the Pyrenees. The beds of iron in the environs of Vicdessos appeared to him to have been formed by sublimation.

|| Thus, according to Leopold de Buch, all the gneiss of Finland is only the result of the transformation of argillaceous schists, under the action of substances which were disengaged at the time of the upheaval of the granite; this is, he adds, the opinion adopted by all geologists.—(*Ueber granite und gneiss. Abhandlungen der Akademie der Wissenschaften zu Berlin*, p. 63, 1842.)

§ *Voyage en Ecosse et aux îles Hébrides*, 1821.

the name of metamorphism, the changes which, according to the theory of Hutton, the rocks of sedimentary origin have undergone by the action of central heat: this is the name that since then has been adopted.*

But, at this epoch, what excited attention in the highest degree was the work of Leopold de Buch, on the geology of the southern Tyrol, published in 1822,† Already in the last century, as we have before said, Arduino had attributed the origin of the dolomite of Vicentine to a transformation of limestone. Twenty years after, Heim, a German geologist, whose works contain a great number of facts which were then new and judiciously observed, made observations in Thuringia which led him to the same conclusion.‡

Leopold de Buch presented this hypothesis anew in a striking manner, while giving it a wider scope. For him the colossal and ruptured masses of dolomite in the valley of Fassa are only limestones, into whose innumerable fissures the eruptions of melaphyre, which raised and broke them up, have introduced magnesia in a state of vapor. He was thus brought to the conclusion that it is not heat alone, but also chemical emanations which have had an influence in the transformation of rocks.¶ This was, moreover, increasing the importance of mechanical dislocations by showing how they might open sources of sublimations or vapors, which afterwards act upon the rocks. It was, in a word, a new point of view introduced into the science by one who was then already at the head of geologists.

Later research has shown that certain modifications must be applied to this conclusion; but the questions which the bold hypothesis of the metamorphism of dolomite gave rise to elicited investigations which have enriched science. An idea which leads to discoveries rests, in general, on some profound relation and denotes an inventive mind.

The Alps, which will ever be a classic region for geology, as much on account of the energies which produced this chain as of the deep and imposing rents through which it exposes its internal construction, have furnished, together with Scotland, the fundamental observations for the theory of metamorphism.

Previously, in a memoir which marks an epoch in science, and which appeared at the time that Cuvier and Brongniart published

*Metamorphic rocks form a part of his *hypogene rocks*.

†Lettres sur la Geologie de Tyrol meridional --(*Annales de Chimie et de Physique*, vol. xiii, 1822. *Taschenbuch*, vol. xix and xx, 1824.)

‡Speaking of the cavernous dolomites of the Zechstein, he says that the same kind of dolomite is found in the Muschelkalk; that it is only a peculiarity of limestone. It was not known at this time that this rock contained magnesia. This modification of limestone, he adds, is in relation with the accidents which have been produced from below upwards, and, among natural forces, vapors are the only ones which could have produced such an action; they have at the same time formed gypsum, which is always associated with the dolomite.--Heim, *Geologische Beschreibung des Thuringerwaldgebirgs*, 1806.

¶However, before this time Breislach, in his excellent description of the Solfatara of Puzzuoli, had shown that vapors alter rocks. Cordier, in 1820, had also shown that alunite results in general from the action of sulphurous vapors on feldspathic rocks.--(*Annales des Mines*, 1st series, vol. v, p. 303.)

l'Essai de la géographie minérologique de environs de Paris, Brochant* had signalized, in the most precise manner, the passage of sedimentary to crystalline rocks, then reputed primitive in the Alps of the Tarentaise. Still later he had the good fortune even to find fossils in them. Applying to these crystalline rocks nearly the same arguments which Hutton had used, he concluded that the granular, micaceous and talcose limestones, the micaceous, talcose and amphibolic schists of this region of the Alps, were of sedimentary origin, and he referred them to the formations of transition, on account of their analogy to those of Germany. He even went so far as to bring together in the same group the granitic rocks of Mont Blanc and the talcose and feldspathic rocks with which they are associated, and believed he could establish the relatively recent age of these supposed alpine granites. Without adopting the principle of the transformation of rocks, he, nevertheless, contributed, perhaps without knowing it, and with a remarkable clearness and rigor of deduction, to the development of these new ideas.†

An excursion into the Alps of Glaris, made by Studer and Mérian in 1826, revealed for the first time a passage of the secondary formations (flysch) to rocks as crystalline, as the micaschist and gneiss of St. Sothard and Chamouny.‡ As said Elie de Beaumont,|| in a letter that he wrote twelve years later, after having visited the same localities, "We have before our eyes one of the most evident facts of metamorphism in the Alps, and at the same time one of those which best prove that these phenomena are not exclusively confined to the oldest formations."

Such is, moreover, the important conclusion to which Elie de Beaumont had on his own part arrived, nearly at the same time with Studer, in a careful examination of the Alps of Daupheny and Savoy, an examination which was of immeasurable importance for geology. He recognized in the graphite of the Col du Chardonnet, which is associated with feldspathic rocks, a result of the transformation of anthracite,§ and after a mature consideration he proposed to refer the age of a part of these crystalline rocks to the jurassic formation.

Thus the prestige of antiquity belonging to the formations of the Alps, which had already been shaken by Brochant and Leopold de Buch, was forever overthrown; and at the same time Elie de

*Geological observations on the formations of transition of the Tarentaise and other parts of the chain of the Alps.—(*Annales des Mines*, 1st series, vol. xxiii, p. 321; 1808.)

Considerations on the place that the granitic rocks of Mont Blanc should occupy in the order of primitive rocks.—(*Annales des Mines*, 1st series, vol. iv; 1816)

Discovery of organic fossils in the crystalline rocks.—(*Annales des Mines*, 1st series, vol. iv; 1819)

†Attention was again attracted to the beds which compose the chain of the Alps by the work of Blackwell —(*Travels in the Alpine parts of Switzerland and Savoy*; 1822.)

‡*Zeitschrift von Leonhard*, vol. xxv, p. 1; 1827.

||Letter from Elie de Beaumont to Studer, cited in *Leonhard's Jahrbuch*, p. 352; 1840.

§On the occurrence of vegetable fossils and graphite at the Col de Chardonnet, department of the Haut Alps.—(*Annales des Sciences Naturelles*, vol. xv; 1828)

Beaumont made known how recent is the elevation of the greatest chain of mountains in Europe. These results, at the same time so novel and so grand, deeply impressed all minds, and gave an extraordinary impulse to geological studies.

Appointed at this time to the chair of geology at the School of Mines, Elie de Beaumont thenceforth powerfully contributed to spread the geological doctrines on which he had conferred so many acquisitions, especially through observations made by himself in the Alps, or derived from the memoirs of Maccullock on Scotland. The comparison by which he summed up the gradual transition of sedimentary to crystalline rocks, likening it to "the physical structure of a brand half burned, in which we can trace the ligneous fibres far beyond those points which still preserve the natural characters of wood," is as clear as it is profound.* He showed, besides, that limestones and other rocks might have crystallized without having been fused, just as occurs with a bar of iron long heated below its point of softening.†

When Elie de Beaumont, discovered a few years after, in the midst of l'Oisans‡ granitic rocks jutting out above the jurassic limestone which had become saccharoidal, and in contact with which they have produced little veins of metallic minerals, while it modelled itself exactly to the undulated contours of the surface, he still more enlarged the field of metamorphic phenomena.

Facts exactly like those which had just been discovered in the Alps were recognized in the region of the Apennines. The marble of Carrara, and the mass of talcose and micaceous schist which accompany it, were, by the observations of Pasini, Pareto, Guidoni, and Paul Savi,|| which were confirmed by Hoffman,§ classed in the secondary jurassic or cretaceous formations. Tuscany had furnished to Savi, as far back as 1829, many remarkable examples of various alterations in the neighborhood of serpentine. The Pyrenees also revealed at the same epoch facts which confirmed and extended these new ideas.

In 1819 Palassou, an observer as judicious as modest, after having for four years explored these mountains, announced with certainty that no primitive limestones existed in this chain, and that beds of limestone as crystalline as the marble of Paros alternated with fossiliferous beds, and sometimes even contained them.¶

* *Annales des Sciences Naturelles*, vol. xv; p. 362-372.

† *Annales des Mines*, 3d series, vol. v, p. 61.

‡ Faits pour servir à l'histoire des Montagnes de l'Oisans.—(*Annales des Mines*, 3d series, vol. v, p. 1.)

|| The works of these geologists have been reviewed by M. Boué in the *Bulletin de la Société Géologique de France*, vol. iii, p. 42.

§ Entdeckungen über den Marmor von Carrara.—*Jahrbuch*, p. 102, 1833. Gebirgs Verhältnisse der Grafschaft Carrara.—*Jahrbuch*, p. 563, 1834. *Karsten's Archiv*, vol. 6, p. 229.

We ought here to call to mind that M. de Blainville had at this time previously discovered in the polished specimens of this last rock unequivocal vestiges of polypiers.

¶ Memoir on the limestones of the Pyrenees.—(*Suites des Mémoires de Palassou*. Pau, 1819.)

De Charpentier had also noticed like alterations in his important work on the Pyrenees, 1823.

Dufrenoy showed that these transformations were due to the intercalation of granitic masses; that they existed throughout the entire extent of the chain, and that they affected formations of different ages, up to and comprising the chalk.* He afterwards showed that accumulations of iron ore in the neighborhood of granite also took place after the formation of the chalk and in consequence of the upheaval of that chain.† Thus the formation of metamorphic rocks and of metalliferous deposits attested the power of the action of granite. Besides this, Dufrenoy also found in the cretaceous formation the traces of peculiar alterations due to the proximity of ophites.‡

Among the first observers of metamorphic phenomena it is just to mention M. Keilhau, who in 1826 discovered that the deposit of transition in the environs of Christiana is generally modified near granite;§ and also Dr. Charles Jackson, who in 1827 announced that amygdaloidal rocks were produced by the action of trap rocks on the sandstone in Nova Scotia.

CHAPTER IV.

WORKS RELATING TO OTHER EFFECTS WHICH THE INTERIOR OF THE EARTH EXERTS OVER THE EXTERIOR CRUST, AND WHICH ARE RELATED TO METAMORPHISM.

Besides the effects of transformation of which we have just spoken, there are various other phenomena which appear also to result from the action which the interior of our planet has exercised in ancient times, or still exercises, upon the external crust; such are volcanoes, eruptions of the older rocks, metalliferous deposits, and the mechanical dislocations to which chains of mountains owe their origin. These different chemical, physical, or mechanical effects of the internal action of the globe are very probably associated, and it would leave a blank not briefly to notice in this history the labors which have indirectly contributed to illustrate the effects of metamorphism.

§ 1. *Eruptions of Volcanoes.*

The extinct volcanoes of central France, whose identity with existing volcanoes|| was ascertained in 1751 by Guettard, revealed at a later period to Dolemiu an important fact; it was that volcanic phe-

* Especially in the environs of Saint Martin de Fenouillet. *Caractères de la craie dans le sud de la France* — (*Annales des Mines*, 2d series, vol. viii, page 311, 1830.)

† Memoir on the geological position of the principal iron mines of the eastern part of the Pyrenees, accompanied by considerations on the time of upheaval of Canigou and on the nature of the Rancy limestone. — (*Annales des Mines*, 3d series, vol. v, page 307, 1834.)

‡ Memoir on the connexion between the ophites, the gypsums, and the salt springs of the Pyrenees. — (*Annales des Mines*, 3d series, vol. ii, p. 21, 1832.)

§ Mallassou also had perceived a part of these modifications. — (See p 100 of the work cited above.)

|| M. Keilhau assigned as a cause of these changes, which sometimes extend for 1,000 yards, simple molecular action, without the intervention of heat, nor of emanations from below. He thought that eruptive were only sedimentary rocks situated at a greater depth, and become liquid. — (*Darstellung der Uebergang's Formation in Norwegen*, 1826; *Ueber die Bildung des Granits*. — *Karstens Archiv.*, vol. x, 1837. — *Gæa Norvegica*, 1, 1830.)

¶ Memoir on some of the mountains of France which have been volcanoes. — (*Mémoires de l'Académie*, 1752.)

nomena have their origin under granite and the other primitive formations; that is to say, below the *solid crust* of the globe.* This idea, with which we are now so familiar, appeared new at an epoch when volcanic eruptions were generally considered as isolated, superficial, and insignificant accidents. In fact, the experiment of Lémery on the spontaneous combustion of a heated mixture of sulphur and iron,† or the supposition of the subterraneous conflagration of carbonaceous combustibles sanctioned by the almost sovereign authority of Werner, had led everywhere to the assignment of some local focus as the cause of these phenomena. Buffon himself, the most ardent promulgator of the primitive heat of the globe, took no other view of them. Thus the grand idea of Descartes, which had thus early connected these phenomena with the formation of hot springs and metallic veins, and even with ancient fractures of the earth's crust, had passed into an oblivion scarcely conceivable. And it was by being brought back to this idea through the force of facts that Dolemieu contributed so much to the rapid advance which geology then made in France.

But the human mind is in general not freed from erroneous ideas except by long and successive efforts. It was then believed, and Dolemieu sought to explain it by unfounded hypotheses, that lavas, instead of deriving their heat from internal fires, acquire it by a sort of interior combustion which they undergo on arriving in the atmosphere; that, moreover, they are kept liquid by some kind of flux, such as sulphur. It was necessary that Spallanzani should perform a long series of experiments on the fusion of lavas in crucibles and glass furnaces to overthrow these prejudices.‡ The exactitude and the genius for observation of the illustrious professor of Pavia showed itself in his studies on the nature and origin of volcanic rocks, as well as in his brilliant discoveries in animal economy; and he is one of those who had the merit of introducing the experimental method in geology.§ Since then Alexander Von Humboldt, after having ex-

* 1st. The products of volcanic action belong here (in Auvergne) to a mass of matter which differs from the granites and lies below them. 2d Volcanic action has exerted itself here under the granite, and has been at work in the depths much inferior to it. 3d. Granite is not the most ancient rock, since it is of necessity posterior to that which supports this mass.—(Report made to the Institute on the travels of the years 5 and 6, *Journal des Mines*, vol. 7, p. 397, 1798.)

A few lines further on (p 398) Dolomieu adds, "that there are reasons for extending these conclusions to all other volcanoes, without regard to the nature of the soil that surrounds them. Volcanic agents everywhere have their seat at great depths below the *consolidated crust* of the earth

† Mémoires de l'Académie des Sciences, 1700.

Afterwards Pallas was led to refer the cause of volcanoes to the crystalline schists containing pyrites, like those he had had an opportunity of seeing in the Ural.

‡ Voyage dans les Deux Siciles, 1792, introduction and fourth volume.

§ Spallanzani further discovered the *marine acid* (chlorhydric acid) among the gases which puff up the lavas, and hydrogen in the natural fires of Barigazzo.

In closing his observations on lavas, Spallanzani reproduces this remarkable opinion of Faujas-Saint-Fond. "It is not impossible that water united with fire may bring about combinations unknown to, and unattainable by art."—(Vol. iv, p. 75)

explored the immense volcanoes of the two Americas, and Leopold de Buch, who so profoundly studied the structure of the Canary islands, have, upon other considerations, still further evinced the power and universality of volcanic action, and the varied forms under which it manifests itself.

§ 2. *Eruptive rocks.*

Auvergne, which, like Scotland, presents in its geological constitution features that command attention immediately, has likewise furnished the first well-attested examples of rocks which, without having come from the crater of a volcano, have, beyond a doubt, had an eruptive origin. Desmarets recognized the igneous formation of basalt during an excursion that he made in that country in 1763, and published it in 1768;* seventeen years, therefore, before the publication of the first memoir of Hutton. It was then that the long discussion took its rise between the neptunians and the plutonists, a discussion which sometimes degenerated into a keen dispute, and which, it is remarkable, was prolonged for more than half a century after the eruptive origin of basalt had been ascertained in Auvergne, in Italy, by this same Desmarets, and in the Hebrides by his successor, Faujas Saint Fond. It is evident from a report made by Cuvier, in 1808, that the arguments of the school of Werner still preserved their prestige even in a country where facts supported by so much evidence plead on the opposite side, and where such remarkable examples of the intrusion of rocks had been recognized by Strange, Hutton, Haussmann, and Leopold de Buch.† Without doubt the question would have been more speedily settled if European communications and relations had in those days presented the same facilities as in our own.

§ 3. *Formation of metalliferous deposits.*

Since it has been recognized that metalliferous veins, as Descartes had inferred, have been filled by exhalations coming from the depths of the earth, their study has contributed to throw light on the subject with which we are occupied; of this we shall see the proof further on.

§ 4. *Mechanical dislocations of the crust of the earth.*

The formation of mountain ranges presents in its history phases not less singular than that of eruptive rocks.

* Mémoires de l'Académie, 1768.

† "It was in conformity with the observations of Desmarets that a volcanic origin was for a long time attributed to all the basalts, rocks very similar to certain lavas. It appears, however, that the formations which resemble lavas do not all have the same origin. Such are the rocks called *wicks*, which cover great tracts in certain parts of Germany; they are there perfectly horizontal, have no elevation that could be regarded as a crater, and rest upon very combustible coal, which they have not altered. They are not therefore volcanic. Werner had perfectly proved these facts, and as a result of his observations a multitude of formations lost the origin attributed to them. The opinion of Hutton and James Hall that they were melted *in situ* at the time of a general and violent heating of the globe will hardly hold good." Edition in 8vo., pp. 171 and 172. Desmerets was a witness to all this long discussion and of the report which thus condemned his conclusions, for he died in 1815.

Descartes had given a new proof of his admirable penetration of mind in attributing the dislocations of the *terrestrial arch* to the cooling and contraction of the internal mass.*

Stenon, relying on the precise observations which he made in Tuscany, thought, as early as 1669, that he had grounds for concluding that the stratified formations had lost their first horizontality, probably from the influence of subterraneous vapors.† He published his work after having remained two years in Paris in company with Descartes,‡ whose system made a profound impression upon him.

The beautiful conception, however, of the French philosopher relative to the origin of the asperities of the globe, notwithstanding the support given to it by Stenon, was for a long time slighted, and gave place to hypotheses which we now know have no foundation. Leibnitz himself, although founding his opinions on the ideas and observations of these two great men, preferred to attribute the drying up of the ancient beds of the sea to the infiltration of a part of the water into abysses which he supposed to have been produced by the ebullition of the primitively melted mass.

Buffon, although attributing much to primitive heat, was not more happy than Leibnitz in the two opposite and contrary opinions which he successively published on the formation of mountains.§ It was, in fact, only after a century that Hutton, James Hall, and Saussure, were brought back by new paths to the very prolific idea of Descartes.¶ It still, however, remained vague, unsettled, and veiled, as it were, by the school of Werner, when Leopold de Buch, and afterwards Elie de Beaumont, gave it definitively a fundamental importance, by

* "The fissures enlarging, the external parts could no longer sustain themselves, and the arch breaking up suddenly made it fall in large pieces on the superficies of the interior; but as this superficies was not sufficiently large to receive all the pieces in the same situation in which they previously were, it was necessary that some should fall to one side and should rest the one on the other."—(§42, page 322, Works of Desmerets, edition cited above.)

† The work published by the Danish savant, alike anatomist and geologist, under the title, *De Solido intra Solidum naturaliter contento, Dissertatio Prodomus*, in an extent of 76 pages only, constitutes, by the justness and importance of the observations which are noticed, by the connexion and vigor of its reasoning, the precision of its style, and the somewhat geometrical form that its author has given it, one of the most remarkable works on geology, as Dr. Bertrand de St. Germain has well remarked.

A long time since Eliè de Beaumont called attention to the principal conclusions of Stenon in the *Annales des Sciences Naturelles*, vol. xxv, 1832.

Stenon also distinguished volcanic from stratified rocks, and, among these last, ancient and recent beds.

‡ From 1664 to 1666.

§ Either in the sea, by the motion and sediment of the waters, (*Théorie de la Terre*,) or by fire at the time when the globe was still incandescent and consequently long before there were seas and living beings, *Epoques de la Nature*, which, as we know, appeared nearly thirty years after the first work.

¶ We are indebted, however, to Robert Hooke for very exact observations in regard to earthquakes, 1705; to Lazzaro Moro, 1740; to Fichtel, *Ueber die Karparthen*, 1791; Heim, *Geologischen Beschreibung des Thuringewalds*, third part. This last observer had entered into a number of ingenious considerations on the possibility of the upheaval of mountain chains by basalts and porphyrys, on the sublimations of metals and minerals in rocks, as well as on the alterations produced in different rocks by igneous eruptions.

giving it precision and at the same time supporting and developing it by numerous and exact observations.*

It was discovered, besides, that the formation of thermal and gaseous springs, as well as of metalliferous veins, had some connexion with this system of fracture, even in regions which are not traversed by eruptive rocks.†

§ 5. *Internal heat of the earth proved by direct measurement.*

Although the internal heat of the earth forms the foundation of the entire system of Hutton, it was not until later that this capital fact was verified in a positive manner, that is, by measurements sufficiently exact and numerous enough to establish the truth of it beyond a doubt. By an exception which is rare in the sciences of observation, speculative ideas, had, in this particular case, anticipated the discovery of the reality. Before the first memoir of Hutton there existed scarcely anything relative to the increase of temperature below the earth's surface, but the observations cited by Kircher in 1644,‡ and those made by Gensanne in 1749, in the mines of Giromagny. The measurements made in Saxony by Freiesleben and Humboldt date from 1791; they were, therefore, only anterior to the second edition of the work of the chief of the Scotch school. From this time observations have succeeded one another in great number up to the present day; the principal of which are due to Aubuisson, de Trebra, Arago, Dulong, R. Fox, Boussingault, Reich, Delarive, Hermann, Walferdin, and some others. There were still, however, causes of error which raised objections to the main fact, when Cordier, in his *essay on the temperature of the earth*, (read in 1823 before the Academy of Sciences, and published in 1827,) overcame the last doubts. Before this publication, this savant, whom the aspect of Teneriff had long before confirmed in the ideas which he had imbibed from Dolomieu, had rigorously determined by the aid of a new process of analysis the mineralogical constitution of volcanic rocks, and the analogy which unites them all, even when they are of a different composition.§

Finally, we know that several geometricians have sought to study by calculation the condition of the interior of the globe at different epochs.

* The superposition of granite and porphyry in the formations of transition of the environs of Christiania, which Haussmann, observed in 1805, and the slow and gradual rising of the soil of Sweden, were irresistible arguments to Leopold de Buch.

Among the oldest observations of the same kind we must cite those of Count Marzari Pencati, who had accompanied Fonjas Saint Fond to Italy, and who had given his attention to the superposition of the rocks reputed primitive and to stratified formations, particularly in Southern Tyrol, (1819.)

† Hoffman was one of the first to clearly point out this relation for the gaseous springs of the north of Germany.—(*Nordwestliches Deutschland*, 1830)

‡ The same year that Descartes published his ideas on internal heat These first experiments are due to Schapellmann, Bergmeister at Schemnitz, in Hungary.

§ *Recherches sur les différents produits des volcans*.—(*Journal des Mines*, vol. xxi, p. 249, 1807; vol. xxiii, p. 35, 1808.) *Mémoire sur les substances dites en masse qui entrent dans la constitution des roches volcaniques de tous les âges*.—(*Journal de Physique*, vol. lxxxiii, 1816.)

I can only cite here the important investigations made for this purpose by Fourier, Lagrange, Laplace, and Poisson.*

In short, it has been by several very different paths that we have come to admit the idea of a central heat as a fundamental idea in geology, and to recognize the importance of the doctrine of metamorphism which attaches itself to it as an effect to its cause.

CHAPTER V.

MODIFICATIONS WHICH HAVE TAKEN PLACE SINCE THE TIME OF HUTTON IN IDEAS RELATING TO METAMORPHISM.†

Up to the time to which our third chapter brought us, that is to say, during the first third of this century, heat aided by certain volatile substances had been considered, after the example of Hutton, as almost exclusively the cause of metamorphic phenomena. It was thought that the transformed rocks had crystallized, after having been softened and perhaps penetrated by the neighboring or subjacent igneous masses.‡ We shall see further on that all the synthetic experiments of metallurgical works and of laboratories seemed completely to ratify this view of the subject. Certain more attentively observed facts, however, arose to combat this generally admitted hypothesis. It was in vain that, to do away with the serious objections which were raised, the action of cementation, of electricity,§ and of the possible solution of certain silicates, the one by the other, were appealed to. Grave doubts had sprung up, and from that time they only continued to increase. At this moment a new way seemed to open; we shall presently see who were those that first entered upon it.

It was first ascertained that metallic veins could not, for the most part, have been filled either by means of fusion or of sublimation, but by matters held in solution in water which was at a high temperature.

* Note sur le rapport qui existe entre les refroidissement progressif de la masse du globe terrestre et celui de la surface.—(*Comptes Rendus*, vol. xix, 1844, and *l'Institut*, p. 32, 1845. Mémoire sur la théorie mathématique des températures terrestres.—*Annales des Chimie et de Physique*, vol. ii, p. 387.) Several important memoirs by Mr. Hopkins and Mr. Hennessy.

† Instead of attributing, as did Hutton, the heat subsequently acting upon certain sediments to the temperature of the bottom of the sea, which we now know to be very low, it is explained by other causes, as we shall see in the third part of this work.

‡ Boué. mémoire cited above, 1824.—(*Annales de Chimie et de Physique*, 2d series, vol. lx, p. 291, 1835.—*Société des Sciences de Lyon*, 1845.—*Bulletin de la Société Géologique de France*, 2d series, vol. ix, p. 222.)

Fournet, who represented this school in France, compared these phenomena to the absorption of the sides of a cupell. He tried to prove by experiment that argillaceous schists submitted to the combined influences of heat and of certain fusible bodies, will be penetrated by them with the greatest ease, and will thus undergo chemical action. The quartz nodules (ganglions) found in micaschists were due to this cause. Quartz, in consequence of a peculiar kind of *surfusion*, might be consolidated after more fusible substances. It is thus that Fournet explains the alteration of the eruptive by the surrounding rock, an alteration which he calls *endomorphism*.

§ Virlet has attributed the effects of metamorphism to electro-chemical action; developed, perhaps, by the aid of high temperature.—(*Bulletin de la Société Géologique de France*, vol. v, p. 313, 1835.)

The remarks of Longchamp on the relation between the thermal springs of Chaudesaigues and the lode of iron pyrites from which they spring*, and on the other hand, the ingenious experiments by which Becquerel was able by the humid process to imitate galena, sulphuret of antimony, and other minerals of metallic veins, contributed to recall ideas in this direction.† Since 1833, Fournet, after having studied the metallic veins of Pontgibaud, in Auvergne, concluded that they had probably been filled by the incrustations of mineral waters.‡ The mineralogical resemblance between the veins of Saxony and the silicious and metalliferous deposits of the lias, in Bourgoyne, which, according to all probability, could only have been made in the wet way, confirmed this opinion, as has been shown by Baron de Beust.§ Besides, as Elie de Beaumont had a long time before said, in his lectures at the School of Mines,|| metallic veins are generally found near lines of contact of the stratified with the unstratified rocks which have penetrated them; and such is also the usual position of hot springs, which at the present time very frequently deposit stony or metallic substances in the channels through which they run. The important conclusion to which this collation of facts led, on the mode in which metallic veins have been filled, differed in essentials still more from the hypothesis of Werner, than from those of Descartes and of Hutton.

Moreover, the study of the metamorphic formations themselves brought to light circumstances which the dry process could not explain, and especially the extent and uniformity of the transformed masses, the mode of dissemination, and the arrangement of the minerals which were formed in these rocks, which were ascertained not to have been softened and never to have been submitted to a very high heat. This last induction results from different facts which will be noticed in the third part of this work.

Durocher, in the sequel to a memoir published in 1846,¶ where he recorded many observations of his own, attributed the effects of metamorphism to slow action and to molecular transference very anal-

* *Annales de Chimie et de Physique*, vol. xxxii, p. 294, 1826.

† *Annales de Chimie et de Physique*, October, 1829; September, 1832; May, 1833.

‡ *Bulletin de la Société Géologique de France*, vol. v, p. 188—vol. iii, p. 251.

In 1837 Mr. Robert Were Fox (*Report of the Royal Cornwall Polytechnic Society for 1836*) showed how lodes appear to owe their origin to hot springs; he attributed their formation to thermo-electrical effects—the traces of which he thought he had found in the experiments he had made on metallic veins.

De la Beche adopted these ideas in his *Geological Report on Cornwall and Devon*, 1839.

§ *Kritische Beleuchtung der Wernerschen Gangtheorie*, p. 6, 1840.—The author points out the striking resemblance of the deposits contained in the beds of arkose of Burgundy, with the veins of Freyberg.

The interesting observations of Bischof on the formation of iron pyrites and on hot springs have contributed to confirm this result. The memoir which he published on the filling up of metallic veins, bears date 1843.—(*Ueber die Entstehung des Quarzes und Erz Gänge.*)

|| *Explication de la carte Géologique de France*, vol. 1, p. 43, 1841.

¶ *Etudes sur le métamorphisme*, *Bulletin de la Société Géologique de France*, 2d series, vol. iii, p. 547, 1846. *Métamorphisme dans les Pyrénées.*—(*Annales des Mines*, 3d series, vol. vi, p. 78.)

ogous to cementation. Other considerations which tended to the conclusion that water had probably served as a vehicle of the heat are due to Fuchs, Silliman and Dana,* and to Schalfäutl.† Nor must we fail to speak of the labors of Bischof, who, possessing great critical judgment and knowledge of the resources of chemistry, did not cease, during many years, to combat the ultraplutonic ideas which were in vogue at the time of which we are speaking.‡ Volger also, following this example, has brought numerous arguments to bear against the action of heat, which he even entirely rejects.

After having studied the volcanic phenomena of Iceland in all their principal peculiarities, Bunsen called attention to the action of gas and water at temperatures comparable to those of the existing fumaroles, and considered them as a cause of metamorphism at least as powerful as heat.§ Cotta likewise, in describing the great examples of metamorphism in the Alps, remarks, with justice, that such effects cannot have been produced without the co-operation of water, which proceeded either from the humidity of the rocks or from hot springs.|| Still later, Delesse has examined, by help of the chemical analysis, the nature of eruptive rocks and of those which surround them at their point of contact.¶ Judging from a great number of facts, he has also come to the conclusion that trap and granitic rocks appear to have modified the rocks which surround them, less by their own heat than by aqueous emanations which were charged with different saline or acid substances.**

At the same time that the observations of which we have just spoken tended to cause the action of water in metamorphism to be admitted, it was recognized, on the other hand, that granite, the eruptive rock to which the most energetic power of transformation over the surrounding masses had been attributed, could not itself have

* If a rock is calcined 12 yards in depth, it must have been melted not less than half this distance, where heat has been the cause of the transformation. The heat appears to have had water for a vehicle —(*Silliman's Journal*, vol. xlv, 1843.)

† *Die neuesten geologischen Hypothesen und ihr Verhältniss zur Naturwissenschaft überhaupt.* Leonard's Jarbuch, p. 858, 1845.

‡ A work very rich in observation by M. Bischof was published from 1847 to 1855, entitled, *Lehrbuch der chemischen und physikalischen Geologie.*

One of the principal arguments which Mr. Bischof develops against the dry way, consists in the production of minerals resembling those of the crystalline rocks as pseudomorphs or epiginies, that is to say, in conditions where the minerals could not have been formed but in the wet way. He does not, however, attribute an important part to the vapor of water, after remarking its feeble action on rocks both in the burning mine of Dutweiler, which has been on fire for two centuries, and in the soffionis of Tuscany.

§ Ueber den innern zusammenhang du pseudovulkanischen Erscheinungen Islands. *Annalen der Chemie und Pharmacie*, vol. lxii., p. 1, 1847. Ueber die Processe der Vulkanischen Gesteinbildungen Islands. *Pogg. Ann.*, pp. 83, 197, 1851; *Leonhard's Jarb.*, p. 537, 1851.

|| *Geologische Briefe aus den Alpen*, p. 243, 1850.

¶ *Etudes sur le métamorphisme.* —(*Annales des Mines*, 5th series, vols. xii and xiii, 1857 and 1858.)

** It is a fact analogous to that which proves the association of metalliferous deposits with eruptive rocks.

been produced by a purely igneous fusion. Breislack,* Fuchs, and Boucheporn, Schafhäütl and Scheerer,† concluded from the abundance of isolated grains of quartz, from the manner in which its elements are grouped together, in fine, from the presence of pyrognomic minerals sometimes found in it, that granite originally contained water, and, moreover, that the presence of this water could have prolonged the plasticity of the mass much below its point of actual fusion. Elie de Beaumont showed, in addition, that granite probably owes its mineralogical composition to different substances, which, since its consolidation, have partly disappeared with the water, such as compounds of chlorine, fluorine, and boron. Thus the mode of formation of granite takes a character intermediate between the origin of metallic veins and that of volcanic and basic eruptions,‡ and the eminently crystalline condition of this rock is not caused by its having been solidified at great depths.

The ingenious observations of Sorby on the liquids enclosed in the microscopic vacuities of rocks have entirely confirmed the intervention of water and heat in the formation of granite.§ It will be remembered that the attention of Davy had been already arrested by the minute drops of liquids, accompanied by gaseous matters, which may be distinguished by the naked eye in certain crystals, and that their examination had led him to suspect that water, with the aid of pressure, had contributed to the formation of rock crystal. Later, Sir David Brewster has given greater extent to this species of researches.||

Another order of facts which has still further confirmed the induction that granite might have been plastic without the intervention of a very high temperature is, that the rocks into which it has been in-

* Breislack, although approving with energy the ideas of the neptunists, remarks, that from the order of consolidation of the elements of granite, and the presence of drops of liquid which quartz sometimes contains, it is difficult to admit that this rock has ever been in a real state of fusion. "Why could not water and fire have co-operated together at different times in the production of our earth, and sometimes even have joined their efforts?"—*Institutions Géologiques*, (French translation,) vol. i, p. 68, 1818.

Thus he sought to follow out the idea of which Faujas-Saint-Fond and Spallanzani had already caught a glimpse, in bringing together two agents which are in no way incompatible, as his two antagonists pretended, and which he, on the contrary, saw intimately associated in the volcanoes of which he had made a profound study. "If," says Breislack, "experiments ought to serve as a guide to philosophy, and if those which are carried on in volcanoes are the most important which we can collect, why may we not use them?"

† Discussion sur la nature plutonique du granite et des silicates cristallins qui s'y rallient —(*Bulletin de la Société Géologique de France*, 2d series, vol. iv, p. 468. Réponse aux objections de Durocher, Idem, vol. vi, p. 644, and vol. viii, p. 500.)

‡ Note sur les émanations volcaniques.—(*Bulletin de la Société Géologique de France*, 2d series, vol. iv, p. 1291.) Elie de Beaumont describes the plastic state of granite under the name of *gelatinous surfusion*, p. 1310.

§ Sorby on the microscopical structure of crystals, &c., *Quarterly Journal of the Geological Society*, p. 453, 1858 —(*Comptes rendus de l'Académie*, vol. xlvi, p. 46.)

|| *Annales de Chimie et de Physique*, vol. xxi, p. 182, 1822.

The topaz of Brazil, according to Sir David Brewster, also contains different liquids.—(*Poggendorff's Annalen*, vol. vii, p. 493.)

jected in the state of paste sometimes show but a scarcely perceptible alteration, even in their immediate contact with it.*

The eruptive rocks other than granite in like manner appear to have been formed through the co-operation of water, and for the most part at a temperature much lower than had been supposed.† But if the eruptive rocks themselves have been dispossessed of the prestige of high temperature which they have so long enjoyed, much less could their heat alone have produced the energetic effects which are often attributed to them.

Thus by three different ways the conclusion has been arrived at that water, aided by certain substances, has nearly everywhere been a powerful co-operator with heat in the metamorphism as well as in the formation of the principal metalliferous deposits, and of the eruptive rocks themselves.

I have spoken of the first observations which disclosed the metamorphic state of certain dolomites. Since then this origin has been attested in different countries. Lardy, in his excellent memoir on the geognostic construction of St. Gothard, (1829,) remarks that dolomite and gypsum must have had some connexion with the opening of the crevasse which forms the valley of the Tessin.‡ The polypiers changed into dolomite, and found at Gerolstein by de Verneuil, have, moreover, furnished in favor of the transformation of this rock an argument of which Elie de Beaumont long since showed the weight.

Elie de Beaumont, supporting his idea on the remarkably porous and cracked state of many dolomites, such as those of Tyrol, Lugano, and of Franconia, proved as long ago as 1829 that this structure was owing to an epigenesis, and the substitution of carbonate of magnesia for carbonate of lime in equivalent proportions.§

As to the manner in which this substitution may have taken place, the study of the dolomites and gypsums of the valley of the Tessin had suggested to de Collegno, in 1834, that the carbonate of lime had probably been transformed simultaneously into gypsum and dolomite by the action of mineral waters, the traces of which he even investigated in the Val. Canaria.|| It was this idea which afterwards led Haidinger and de Morlot to imitate dolomite¶ artificially.

* M. Delesse has recently well summed up the facts which prove it, including with them his own observations on the metamorphism of contact.—(*Bulletin de la Société Géologique de France*, 2d series, vol. xv, p. 728.)

Henry Rose has also recently put forth arguments to the same purpose: Ueber die Verschiedenen zustände der kieselsäure Poggendorff's Annalen, 1859.

† The above cited memoir of Mr. Delesse enumerates the principal proofs.

‡ *Denkschrift der Schweizerischen Gesellschaft*, vol. i, p. 200, 1829.

§ Note sur la forme la plus ordinaire de objections relative à l'origine de la dolomie.—*Annales des Sciences Naturelles*, vol. xviii, p. 269, 1829.—*Bulletin de la Société Géologique de France*, vol. viii, p. 173, 1826.

|| Notes sur quelques points des Alpes Suisses —(*Bulletin de la Société Géologique de France*, vol. vi, p. 110, 1834.)

¶ Some savants, among others, Daubeny, Leube and Grandjean, consider dolomite as the result of the action of the atmospheric waters on magnesian limestone

Others, as Rozet and Puggaard, have attributed an eruptive origin to certain dolomites which form veins and contain embedded fragments. (Framont, Grisons, Fulda, Helsingfors, and Sorrente)

In many stratified formations, however, such as the trias, dolomite is found in regular beds ; if there has been a substitution it must have been at the very time of its deposit. This reservation has been made by Elie de Beaumont, especially in favor of the dolomites of the Marnes Irisées.*

It has been also discovered that in certain formations the gypsum resulted from a transformation of the limestone. I will mention only the observations of Hoffmann and of Coquand on the gypsums produced by the fumaroles of the Lipari islands and in Tuscany, and those of Dufrenoy on the gypsums associated with the ophites of the Pyrenees.

The formation of the dolomite, of anhydrite, and of rock salt, has given occasion to very numerous works, which it is impossible to mention here.†

CHAPTER VI.

METAMORPHISM OF STRUCTURE.

In the time of Hutton it had not been remarked that the foliated structure so frequent throughout entire masses of rocks, results from an action posterior to their formation, and consequently thus constitutes metamorphism.

The distinction which we now recognize between a foliated structure and stratification had, however, been described by different authors at the commencement of this century, among whom, Lasius,‡ Voigt,§ Mohs,|| de Hoff,¶ and Schmidt** ought to be cited. In England, John Phillips had clearly recognized the difference between the *true* and the *false* cleavage. Professor Sedgwick†† afterwards confirmed and generalized the fact, showing that in Wales the plates are very generally oblique to the stratification.‡‡

Another very remarkable circumstance, which was signalized by Mr. Sedgwick, is the astonishing constancy with which the plates conform to one another over extensive tracts, and even amidst the most marked convolutions of the beds to which they belong. This observation has been completely confirmed by Studer and Forbes in

* Observations sur les différents formations qui, dans le système des Vosges, séparent la formation nouillère de celle du lias.—(*Mémoires pour servir à la description géologique de la France*, vol. i, pp. 78, 153, 192)

† Among the principal I mention the work of d'Alberti, the memoirs of Fournet and of Boué —(*Ueber die Dolomite. Sitzungs Berichte der Acad. der Wissens. zu Wien*, vol. xii, p. 422 ; 1854.)

‡ *Das Harzgebirge.*

§ *Praktische Gebirgskunde*, 1797.

|| *Molls Ephemeriden*, vol. iii, p. 71 ; 1807.

¶ Slate quarries of Lebesten, in Franconia.

•• In Westphalia.

†† On the chemical changes produced on the aggregate of stratified rocks.—(*Transactions of the Geological Society*, vol. iii, p. 354 ; 1835)

‡‡ Mr. Parrot, engineer of mines, according to a manuscript report of 1826, noticed the same distinction in the slates of the Ardennes.—(*Explication de la carte géologique de France*, vol. i, p. 262.)

the Alps; by Sir R. Murchison and Darwin in the Andes; by Rogers* in the Appalachian mountains, and by other geologists.

There exists, however, between the position of the lamellæ and that of the beds, relations which Baur and Sharpe have with great sagacity brought to light.

The cause of the development of the foliated structure of the phyllades has been attributed to crystalline, polar, or electric agencies. These vague hypotheses could hardly find foundation but in the fact announced by R. Fox, that wet clay in presence of electrical currents will become perceptibly foliated.† These causes, which may be qualified as occult, have, however, been adopted by eminent savants, such as Sedgwick, Sir H. de la Beche,‡ Sir J. Herschel,§ Hopkins,|| and Scheerer.¶ This is easily explained, for the remarkable fact which was more particularly calculated to lead to a right explanation was only recently discovered by Baur.** This geologist was the first to show, in his remarkable work, (1846,) that the cleavage took place at the time of the convolvement of the beds, and that it seems the result of a pressure normal to that which developed the convolutions. It was not until a year later that Sharpe, to whom the priority has often been given, came to the same conclusion, founded on other very precise observations on the distortions produced upon fossils. He afterwards established the same fact for rocks in which no organic remains are found.††

The first attempt to imitate this phenomenon mechanically was made by Professor Sorby, to whom we owe other ingenious researches.‡‡ He discovered by a microscopical examination of the disposition of their elements, as well as by the compression of certain thin layers, that the schistose rocks had undergone compression. Professor Tyndall went still further; he produced a foliated structure exactly like slate in different plastic substances, as pipe-clay and wax, by compressing and submitting them to a process of rolling.§§ It was thus, without doubt, that this expert physicist was afterwards induced to pay attention to the structure and movement of glaciers.

I conclude by calling to mind that Laugel, engineer of mines, and Professor Houghton have sought to subject to calculation the effects of pressure which have produced a schistose structure.

* *Proceedings of American naturalists and geologists*; 1845.

† *Report of the Cornwall Polytechnic Society*; 1837. *Memoirs of the Geological Survey of Great Britain*, vol. i, p. 433.

‡ *Geological Report on Cornwall and Devon*, p. 181; 1839. The polar forces, the author supposes, are probably in connexion with terrestrial magnetism.

§ Lyell. *Manual of Geology*, 5th ed., vol. ii, p. 448.

|| *On the connexion of geology with terrestrial magnetism*

¶ *Karstens Archiv. für Mineralogie*, vol. xvi, p. 109; 1842. *Geological Observations on South America*, p. 168.

◦◦ *Karstens Archiv*, vol. xx, p. 398; 1846.

†† *Quarterly Review of the Geological Society of London*, vol. iii, p. 74; 1847. *Geological Proceedings*, November, 1854.

‡‡ In laminating clay, in which he had scattered pellicles of oxide of iron, Sorby noticed that they placed themselves perpendicularly to the pressure.—(*Edinb. Phil. Journal*, 1853. *Quarterly Review*, vol. x, p. 73; 1854.)

§§ Comparative view of the cleavage of crystals and slate rocks —(*Philosophical Magazine*; 1856.)

The history of the succession of ideas on the formation of lamellæ in schistose rocks may serve for instruction in a philosophical point of view. We see how easy it is, especially in geology, for the ablest minds to err when they deviate from the path of observation and of facts. Moreover, even after the influence of mechanical pressure had suggested the probable cause of the phenomenon, it was ten years before one of the most simple experiments which it would seem ought to have been immediately thought of, was brought forward to verify this induction.

CHAPTER VII.

NOTICE OF OTHER OBSERVERS WHO HAVE INVESTIGATED METAMORPHISM.

The facts upon which the doctrine of metamorphism is based have been observed in all regions of the globe, especially during the thirty years that attention has been called to the subject by many other geologists, some of whom have very much exaggerated or falsified the bearing of the phenomenon. The observers are so numerous that it would be impossible, without lengthening this work beyond measure, to do more than notice the principal names. They are :

In France — Alexander Brongniart,* d'Omalius, de Bonnard,† Fournet,‡ de Boblaye,§ Virlet,|| A. Burat, de Boucheporn,¶ Gras,** Charles Deville, Coquand,†† Puton,‡‡ Gueymard, Lory, Angelot, Drouot, Delanoue.

* Sur les ophiolites ; sur les caractères zoologiques des formations.--(*Annales des Mines* 1821.) Sur le Cotentin --(*Journal des Mines* ; 1815.)

† *Annales des Mines*, 1st series, vol. viii ; 1824.

Besides the memoirs, in which Fournet has published since 1836 very many precise observations and ingenious suggestions on metamorphism, as I have said above, this learned professor has collected at the Faculty of Sciences of Lyons an interesting collection which has been studied by many savants I shall again cite his *Etudes sur les Alpes*, (1845 to 1849)

§ The discovery in the formations of transition of schists, containing at the same time macle and many fossils, by Boblaye, has introduced a new element really positive into the question of metamorphism.--(*Comptes Rendus de l'Academie*, 1838. *Bulletin de la Société Géologique*, 1st series, vol. x, p. 227.)

|| Virlet long since made known numerous effects of metamorphism in Greece, and has even extended the ideas on metamorphism to the utmost in applying them to eruptive rocks, such as granite, protogene, trachite.--(*Geologie de la Grece*, pp. 67, 184, 294, 298, 304, and 306. *Bulletin de la Société Géologique de France*, vol. vi, pp. 279 and 313, 1834 ; vol. vii, p. 310, 1835 ; 1st series, vol. xiv, p. 501.)

¶ De Boucheporn, in exaggerating the action which I had previously attributed to fluor, has admitted that, by heating, the elementary matter of granite had given off fluorites of silicium and of the alkaline metal, which are the cause of the transformation of the neighboring rock, (page 271 of his work.) His original idea on the action of cyanogen in the formation of the globe merits attention.

°° Gras has made important observations on the crystalline rocks of the Alps, Dauphin and Savoy, and considered the spilites of this chain as metamorphic.

†† Coquand has furnished very interesting facts, particularly in describing the solfataires of Tuscany, and in studying the formation of gypsum and of dolomite.

‡‡ The work of Puton on the metamorphisms which have occurred in certain rocks of the Vosges (1838) contains many well observed facts.

In England—Sir James Mackenzie, Jameson, Conybeare, Buchland, Greenough, Sir R. Murchison,* Sedgwick, Sir H. de la Beche,† John Phillips,‡ Colonel Portloch, Doubney, Berger, Poulett, Scrope, Henslow, Ramsay.

In Germany—Humboldt, Naumann,§ de Leonhard, Mitscherlich, Haussmann, W. Haidinger,|| B. Cotta,¶ G. Rose, Abich, d'Alberti, de Morlot, Blum,** Credner.

In Switzerland and Italy—Escher de la Linth,†† de Charpentier, Lardy, de Collegn,‡‡ de la Marmora, A. Favre,§§ de Marignac, Théobald.

In the Scandinavian peninsula—A. Erdmann.

In America—Rogers, Hitchcock, Whitney, Sir W. Logan, Sterry Hunt.

CHAPTER VIII.

HISTORY OF SYNTHETICAL EXPERIMENTS, TENDING TO ELUCIDATE THE QUESTION OF METAMORPHISM.

The progress which we have just sketched has cost more effort than we could at present suppose, for there was scarcely any other guide than purely geological facts, elucidated by analogy and induction. We should have reposed in views of necessity very vague, if synthetical experiment had not followed direct observation, to substantiate and complete it.

It has seemed best to me to enumerate by themselves, and with some details, the principal attempts which have been made up to this time to imitate minerals and rocks artificially. They throw light on the different processes which may have been brought to bear in the very various reactions of nature ; besides, that these are the first steps in a method which appears destined to reveal very important facts for the history of formations and for metamorphism. Leibnitz, it is true, had profoundly appreciated the utility of experiments for the interpretation of the formation of strata, and compared, as far as he was able, the

* The works of Sir R. Murchison on the silurian formations of England, on the Alps, and the Ural, present numerous and important examples of metamorphism.

† Sir H. de la Beche, in his *Theoretical Manual*, his *Art of Observing*, his *Geological Researches*, and his *Geological Report on Cornwall and Devon*, has published a great number of judicious and ingenious observations on metamorphism, as on all other subjects of geology.

‡ Among the works of Mr. J. Phillips, we must here make mention of a report on schistose cleavage, inserted in the memoirs of the *British Association*.

§ Besides his observations made in Saxony and Norway, Naumann has treated metamorphism in detail in his excellent work on *Geognosy*.

|| Haidinger proposes to distinguish *anogenous* and *catogenous* metamorphism, according as they occur near the surface or at a great depth.

¶ Especially in the *Geologische Briefe aus den Alpen*.

** In his studies on the pseudomorphs, Blum has described many facts akin to metamorphism.

†† Numerous observations made in Switzerland with Studer.

‡‡ *Sur le métamorphisme des terrains de sédiment*. Bordeaux ; 1842.

§§ *Notice sur la géologie du Tyrol allemand* ; 1849.

products of nature with those of the laboratory;* but it was under the inspiration of Hutton that the first important synthetical experiments were undertaken.†

§ 1. *Fusion and cooling of rocks.*

Buffon had rigorously established, by direct experiment, that granite and the principal crystalline rocks can be *vitriified*. He thought that these immense masses of “*natural glass*” had acquired their crystalline state after very long annealing.‡ At the end of the last century Sir James Hall, at the same time that he was studying, as we have before seen, the combined influence of heat and pressure on limestone, undertook numerous experiments with the view of testing whether, as the adversaries of Hutton pretended, the rocks formed by fusion should have remained vitreous.§ He discovered, as Buffon had foreseen, that certain silicates, instead of becoming vitreous, may, by slow cooling, become crystalline and assume a stony appearance, similar to that of eruptive rocks. These experiments, which were continued by other savants, proved further, that a vitreous mass can even crystallize without passing through a state of fusion.||

“It will be, in our opinion, an important work, to carefully compare the products taken from the bowels of the earth with those of laboratories; for then will the striking relations which exist between the products of nature and those of art be made visible to us. Although the inexhaustible Author of nature might employ different means for bringing about what He wills, He delights in consistency amid the variety of His works; and to have found the means of reproducing them is really a great step towards the knowledge of things. *Nature is only art on an extended scale*”—(*Protogæa*, French translation cited above, § 9.) “Do not these general laws of the physical world operate in our laboratories as well as in the interior of mountains?”—(*Saussure, Voyage dans les Alpes*, § 750.)

† The experiment by which Lemery, in 1700, tried to imitate volcanic phenomena, by heating a mixture of iron and sulphur in damp earth, was founded on a false resemblance, and only led to an entirely erroneous conclusion; it made, however, a sufficient sensation to justify an allusion to it.—(*Mémoires de l'Académie des Sciences*, 1700.)

‡ *Histoire naturelle des minéraux*. “*These vitreous substances*,” he says, “melt without addition at the same degree of heat as our artificial glass.” Buffon had, besides, remarked that feldspar is much more fusible than the other elements of granite.

Leibnitz had, it is true, previously said that the earth and the stones submitted to fire yield glass; that glass is but the base of the earth, (*Protogæa*, § 3;) but he here confounded all rocks, including limestone, silex, and sand, and there is a wide interval between this vague conception and the first precise experiments made by Buffon.

I have mentioned above (chapter iv, § 1) the experiments of Spallanzani on this subject.

We must also cite the experiments made by Buffon on the cooling of spheres of different dimensions—some of metal, some of sandstone or marble—in order to represent the conditions of the cooling of the terrestrial globe. Newton had before announced his intention to make experiments of this kind.

G Bischof, with the same end in view, made a series of interesting observations of the fusion and cooling of spheres of basalt.—(*Die Wärmelehre des innern Erdkörpers*, 1837, p. 443 to 505.)

§ The experiments of Sir James Hall on the consolidation of basalts and melted rocks, date 1800.—(*Edinburg Phil. Trans.*, vols. v and vi.)

|| The experiments of Hall were continued on a larger scale by Gregory Watt.—(*London Phil. Trans.*, 1804, and *Bibliothèque Britannique*, No. 256.) At the same time Dartigues published his experiments on the devitrification of glass.—(*Journal de Pharmacie*, lix; *Journal de Physique*, lx; *Annales de Chimie*, vol. 1.) Fleuriau de Bellevue, sur l'action de feu dans les volcans, lx, 1805. Drée. Nouveau gendre de liquéfaction ignée.—(*Journal des Mines*, vol. xxiv, 1805; *Mémoires de l'Académie des Sciences*, 1805; *Mémoires de l'Académie*, 1739; *London Philosophical Transactions*, 1776 and 1782.)

Recent observations on devitrifications by Dumas and Pelouze, (*Comptes Rendus*, 1845, 1855, 1856,) and by Messrs. Mitscherlich, Gustave Rose, Charles Deville, and Delesse on the fusion of rocks.

§ 2. *Examination of crystals accidentally obtained in metallurgical manufactures.*

It was thus that the examination of the silicates which flow in abundance in a state of fusion from metallurgical furnaces, was naturally suggested. In accordance with the idea of Leibnitz, Professor Haussmann, in 1816, availed himself of this kind of observation in order to explain geological phenomena, and since that time, this veteran of science has not ceased to render it important tributes.* Soon after Mitscherlich discovered that peridot, pyroxene, and other mineral species crystallize accidentally in the slags of manufactories.† It was a worthy complement of his work on the relation between the forms of crystals and their chemical composition, which had just made such a brilliant mark in mineralogy and chemistry. Since then, under this interesting point of view, metallurgical scoria has been examined with care by Berthier, Vivian, Bredberg, Sefström, Zinken, Wœhler, Karsten, Plattner, Rammelsberg, F. Sanderson, Percy, Miller, and other savants. Professor de Leonhard has recently published a work on this subject in which all the known facts relating to it are carefully summed up and compared.‡

The products obtained in manufactories by the crystallization or liquation of melted matters, are not the only ones that are of a nature to interest the geologist. There are some, such as galena, oxide of zinc, blende, which separate themselves from furnaces either by direct sublimation, or by the volatilization of a part or of the whole of their elements. Among these results of condensation, the most remarkable is feldspar, which has at different times been collected in the upper part of the copper furnaces of Mansfield, in the sublimations of zinc furnaces, the presence of which, simply suspected at first, was proved beyond a doubt by the examinations of Heine and the analysis of Karsten.§ The formation of this important mineral by means of vapor, merits so much the more attention, because, notwithstanding many attempts, it has never yet been obtained crystallized by a direct fusion.

§ 3. *Synthetical experiments by simple fusion or by different mixtures.*

The inspection of crystals, which are accidentally formed in manufactories, necessarily led to direct experiments in the dry way by different methods.|| It is to Berthier that we owe the first attempts in this interesting direction.

* *Göttingische gel. Anzeigen*, 1816, p. 489.—This first memoir was followed by others, both numerous and important, on the same subject.

Koch, in 1809, had described some crystals of the manufactories, among others, the oxide of zinc. The graphite which separates itself from cast iron had also been long remarked.

† *Abhandlungen der k. Akademie der Wissenschaften zur Berlin*, 1823, p. 25 — *Annales de Chimie et de Physique*, vol. xxiv, p. 355.

‡ Dr. Gurtlt. *Pyrogenete künstliche Mineralien*, 1857.—Von Leonhard, *Huttenerzeugnisse*, 1858. Idocrase, gehelenite, are among the most frequent products.

§ *Poggendorff's Annalen*, vols xxxiii, p. 336, and vol. xxxiv, p. 531.

|| Attempts have been made to facilitate the crystallization of different substances by acting upon large masses, which cool very gradually, and by blowing gas into them with a view to producing geodes.

By melting silica with different bases in definite proportions, he obtained in 1823 crystalline combinations identical with those of nature; especially pyroxine.* Afterwards, Ebelmen succeeded, by a very ingenious process due to him, in obtaining infusible combinations. This process consists in employing solvents in a state of fusion, and which can be vaporized slowly at very high temperatures, such as boracic acid, and the alkaline phosphates, or carbonates. It is thus that he produced corundum, the different kinds of spinel, cymophane, peridot, perowskite, and other species.†

The mutual reaction at high temperatures of the volatile metallic fluorides and oxygen compounds constitutes a process which has lately furnished to its authors, Henri Deville and Caron, very beautiful reproductions of infusible minerals, such as corundum, colored in different ways, and staurotide.‡ The same chemists have invented a different process for reproducing apatite.§ It is likewise by a partial volatilization that M. Gaudin has obtained artificial ruby by melting at a very high temperature a mixture of alum and sulphate of potash.|| Despretz has announced that he has obtained the diamond by different processes based upon the transposition and slow deposition of carbon by the electric current.¶ By melting certain mixtures of salts and treating the residue with water, M. Manross has imitated sulphate of baryta, apatite, wolfram, and other minerals.** Rock salt alone employed as a flux has sufficed Forchhammer for producing crystallized apatite, operating, as he did, even on rocks which contained only traces of phosphates.†† If we reflect on the enormous amount of chloride of sodium contained in the liquid envelope of the globe, we can hardly doubt that this salt has co-operated in the crystallization of certain species, especially at the time when the water was not yet entirely condensed. Charles Deville has recently made experiments in this direction, by heating clay or a quartz sandstone previously moistened with chloride of sodium.‡‡

SEC. 4. *Synthetical experiments by the aid of vapors reacting mutually or on fixed bodies.*

Some minerals may be imitated by simple sublimation; such are arsenic, galena, and senarmontite.§§ But it is especially by causing certain vapors to react among themselves, as in metallurgical manu-

* *Annales de Chimie et de Physique*, vol. xxiv, p. 365, 1823.

† *Annales de Chimie et de Physique*, vol. xxii, p. 221, and vol. xxv, p. 279.—*Annales des Mines*, 5th series, vol. ii, p. 349.

‡ *Comptes Rendus de l'Académie des Sciences*, vol. xlvi, 1858, p. 765.

§ Apatite and wagnerite have been obtained by a kind of distillation of the phosphates in the chlorides of the same metals.—(*Comptes Rendus*, vol. lxvii, p. 985, 1858.)

|| *Comptes Rendus*, vol. xlvi, p. 765, 1857.—The melted alumina in the form of ruby, previously obtained by this author, was amorphous, vol. v, p. 803, 1837.

¶ *Comptes Rendus*, vol. xxxvii, p. 369, 1853.

•• *Annalen der Chemie und Pharmacie*, vol. lxxxii, p. 348, 1852.

†† *Poggendorff's Annalen*, vol. lxxxii, p. 568, 1854. Forchhammer has even proposed this method for detecting phosphates and certain metals in rocks, when by the ordinary processes only slight traces are found.

‡‡ *Comptes Rendus de l'Académie*, vol. xlvi, p. 80, 1838.

§§ *Annales des Mines*, 5th series, vol. i.

factories, that various results can be arrived at. It is thus that Gay Lussac obtained peroxide of iron crystallized like natural specular iron, by decomposing at a high temperature perchloride of iron by means of the vapor of water. This reaction sometimes takes place, as M. Mitscherlich discovered, in the pottery furnaces into which chloride of sodium is thrown.* I myself tried, in 1849, a reaction founded on the same principle, in order to verify, experimentally, the action which, on purely geological observations, I had previously attributed to veins of tin ores. By the decomposition of the bichlorides of tin and titanium, I obtained the crystallized oxide of tin, having the same lustre and hardness as the natural mineral, but isomorphous, with the oxide of titanium known under the name of brookite; I have also produced this last mineral itself.† By bringing sulphuretted hydrogen to act on different metallic chlorides reduced to a state of vapor, Durocher has obtained some of the principal sulphurets contained in metallic veins, such as grey copper.‡

Instead of causing the vapors to act one on another, they can be used to attack fixed substances, and thus to develop new combinations. It was upon this principle that I first artificially obtained apatite, as well as topaz.§ Still later I produced, by means of the chlorides of silicium and of aluminium, crystallized silicates and aluminates.|| I also imitated the red oxide of manganese or hausmannite.¶ Mention ought also to be made here of the production of dolomite by Durocher, by the action of chlorine and magnesian vapors on limestone;** of the experiments of Charles Deville on the alteration of silicious rocks by sulphuretted hydrogen and water;†† as well as of those of Rogers on the manner in which water charged with carbonic acid decomposes, even in the cold, the principal natural silicates. It has been said that the vapor of water, if it is at a high temperature, is sufficient to attack numerous silicates.‡‡ Thus, according to M. Jeffreys, bricks heated to the temperature of the fusion of cast iron give off, to a current of the vapor of water, silica, which is condensed in the form of snow.§§ It is by a similar action that water corrodes enamels in the porcelain furnaces.||||

* *Poggendorff's Annalen*, vol. xv, p. 630.—M. Nöggerath has also noticed it as the result of a fire in a salt mine of Wieliczka. The furnaces in which carbonate of soda is manufactured at Framont in the Vosges, by decomposing the chloride of sodium by iron pyrites, have produced splendid coatings of specular iron on the surface of the bricks.

† Researches on the artificial production of some crystallized minerals, particularly the oxides of tin and titanium, and of quartz.—(*Observations sur l'origine des filons titanifères des Alpes; Annales des Mines*, 4th series, vol. xvi, 1849.)

‡ *Comptes Rendus*, vol. xxxii, p. 823.

§ *Annales des Mines*, 4th series, vol. xix, p. 669, 1851.

|| *Comptes Rendus*, vol. xxxix, p. 135, 1854.

¶ *Annales des Mines*, 5th series, vol. i, 1852.

** *Comptes Rendus*, vol. xxxiii, p. 64, 1851.

†† *Comptes Rendus*, vol. xxxv, p. 261, 1852.

‡‡ *Annales des Mines*, 3d series, vol. vii, p. 448, 1835.

§§ Jeffreys's Report of the British Association, 1840.—(*Bibliothèque Britannique*, vol. viii, p. 441.)

|||| Alex. Brongniart and Regnault have verified this fact at Sèvres.

§ 5.—*Humid process.*

The action of the vapor of water on the chlorides and on the silicates, which has just been noticed, is, as it were, an intermediate one between the dry and the wet way. It remains for us to sum up the results of this last. Bequerel has long ago shown the influence of slow action, aided by electricity of very feeble tension, in precipitating insoluble combinations which imitate those of nature.* It was also by the slow decomposition of silicic ether that Ebelmen produced a hydrated silica in solid, compact masses, similar to hyalite and hydrophane.† Gustave Rose has skilfully analyzed the conditions under which carbonate of lime is precipitated in the state of arragonite. Bischof and Sterry Hunt have made divers experiments, the first to verify his ideas on the formation of minerals, the second in support of his theory of the origin of magnesian rocks.‡ Charles Deville has examined how it is that water, with the sole aid of carbonic acid, and without the help of pressure, can contribute to the formation of dolomites.§ From reactions which are produced in the manufacture of hydraulic limes and cements, Kuhlmann has deduced interesting results for geology.|| Mention may here be made of the action of the alkalis on rocks, by Delesse.¶ It is especially at high temperatures and under pressure that we succeed in imitating mineral substances in water.

Hall** and Cagniard-Latour†† long ago discovered that vegetables in these conditions are affected in a peculiar manner. By submitting wood in water to a temperature of about 300° centigrade, I produced a real anthracite.‡‡ At a lower temperature Baroulier, by means of vegetables enclosed in moist clay, obtained an imitation of coal.§§

The beautiful experiment of Haidinger and Morlot on the formation of dolomite has inaugurated the use of water under pressure for the formation of minerals.|||| Instead of forming dolomite by the reaction of sulphate of magnesia on carbonate of lime, Favre and Marignac have since used the chloride of magnesium to produce the same effect.¶¶

De Senarmont has undertaken a long series of experiments,

* *Annales de Chimie et de Physique*, vol. xxxii, p. 244, 1823.

† *Annales des Mines*, 4th series, vol. viii, p. 149; *Comptes Rendus*, vol. xxi, p. 527; *Leonhard's Jarbuch*, p. 807, 1858.

‡ *Bibliothèque de Genève*, 1857, p. 268.

§ *Comptes Rendus*, vol. xlvii, p. 90, 1858.

|| *Comptes Rendus*, vol. xii, p. 852; vol. xxxv, p. 739.

¶ *Bulletin de la Société Géologique*, 2d series, vol. xi, p. 127.

** Hall obtained a kind of coal by the dry way.

†† *Comptes Rendus*, vol. xxxii, p. 275, 1857.

‡‡ *Annales des Mines*, 5th series, vol. xii, p. 305, 1857.

§§ *Comptes Rendus*, vol. xlvi, p. 376, 1858.

|||| *Mémoires de l'Académie de Vienne*, vol. 1, p. 305, 1847.

¶¶ *Bibliothèque de Genève*, May, 1849.

which have thrown much light on very important phenomena.* Operating with the aid of water at a temperature of 130° to 300° centigrade, he succeeded in producing, in a crystallized state, the principal minerals which characterize metallic veins—among others, quartz,† spathic iron, the carbonates of manganese and zinc, sulphate of baryta, sulphide of antimony, mispickel, and red silver. To comprehend at this time all the importance of the problem which was thus solved by this savant, we must remember that until then we had not been able to imitate the greater part of the minerals occurring in veins. Now, the most characteristic species of these formations, numbering more than thirty, have been reproduced by a process similar to that which observation led us to suppose, and by the aid of the element the most widely distributed in hot springs. This memorable achievement, for the first time, showed in geology that an induction relative to an entire order of facts may be demonstrated by experimental synthesis.

De Senarmont has also shown that the sole action of water suffices, with the aid of a high temperature, to isolate the bases of certain salts. It is thus that anhydrous oxide of iron and crystallized alumina or corundum have been produced by the decomposition of solutions of chloride of iron and chloride of aluminium. Brochantite (sub-sulphate of copper) and azurite have been recently obtained by the same process. Up to that time the humid way had not served to produce anhydrous silicates. I have been able to do this by a series of experiments, the principal results of which I shall give in the third part.‡

We may add that nature herself continues to make daily experiments (if the expression may be used) of the same kind with those which we only perform with so much difficulty, employing probably processes analogous to those which she has resorted to from the most remote ages. Unfortunately these reactions take place in regions that we can very rarely reach. It is only in a very few instances that we can be witnesses of the formation of contemporaneous minerals. It is sufficient to go down a few yards into the subsoil of Plombières, and to enter the masses infiltrated for centuries by thermal waters to discover sulphuret of copper in crystals identical with those of Cornwall, and a whole series of zeolites, arranged as in basaltic rocks.§ What would be the result if we could penetrate deeper into the ducts through which these hot springs ascend?

* Expériences sur la formation artificielle par voie humide de quelques espèces minérales qui ont pu se former dans les sources thermales sous l'action combinée de la chaleur et de la pression.—(*Annales de Chimie et de Physique*, vol. xxviii, p. 693, 1849.) Expériences sur la formation des minéraux par voie humide dans les gîtes métallifères concrétionnes.—(*Annales de Chimie et la Physique*, vol. xxxii, 1851.)

† *Anzeigen*, p. 557, 1845.

‡ Observations sur le métamorphisme et recherches expérimentales sur quelques-uns des agents qui ont pu le produire.—(*Annales des Mines*, 5th series, vol. xii, p. 289, 1857; *Bulletin de la Société Géologique de France*, 2d series, vol. xv, p. 97.)

§ Memoire sur la relation des sources thermales de Plombières avec les filons métallifères et sur la formation contemporaine des zéolites.—(*Annales des Mines*, 5th series, vol. xiii, p. 227.) The formation of iron pyrites, which is a mineral so widely dispersed, has been but very seldom seen; and first by Longchamp at Chaudesaigues. Bischof met with it at Brohl, and Bunsen in Iceland.

When we can succeed in thus taking nature by surprise, after the first emotion of pleasure at having wrested from her one of her secrets, we experience a feeling of humility in seeing at the cost of what difficulties we are able to reproduce a few of the most simple mineralogical formations; yet the results already attained show that we have no reason to be discouraged, and that we have it in our power to imitate no small number of minerals without the intervention of centuries.

SECOND PART.

EXPOSITION OF THE FACTS WHICH CONJOINTLY CONSTITUTE METAMORPHISM.

The variety of the facts which I have to present induces me to group them in five chapters. I shall first examine *metamorphism of juxtaposition*; secondly, *regional metamorphism*. I shall then pass in review *metamorphism of structure*; then the phenomena relating to the deposits of *dolomite, rock salt, sulphur, and bituminous deposits*; finally, the *general relation of metalliferous deposits and thermal springs to metamorphism*.

The observations relating to *primitive gneiss*, the origin of which is doubtful, will be reserved for the third part, which will terminate this memoir.

This exposition will be very brief; for it has for its object well-known facts, which it is only necessary to recall in order that we bear in mind the conditions which the theoretical explanation ought to satisfy.*

FIRST CHAPTER.

METAMORPHISM OF JUXTAPOSITION. †

When a rock has been thrown up from below, the beds which it traverses have generally been modified in its neighborhood. Sometimes this modification of the enclosing rocks is reduced to a very narrow bordering, of a few sixteenths of an inch, and the changes produced upon this thin layer are not very decided.‡ In others,

* The examples known would form an entire treatise on descriptive geology. I shall not give them in detail, but content myself with simply announcing them. I shall refer for details to the best works on general geology, particularly to those of Naumann, Studer and Lyell.

† It seems best to me to use this denomination rather than that of metamorphism of *contact*, which is ordinarily employed, because the modifications which it explains extend far beyond the contact of the rocks. The word *local* does not appear to me to be sufficiently characteristic.

‡ As an example, I will confine myself to citing many veins of basalt which intersect the jurassic formation of the Wurtemberg Alps. Granite itself has not always modified the schist, even when it was in a sufficiently fluid state to be injected into it in veins, as in the Vosges near Wesserling.—(*Bulletin de la Société Géologique*, vol. iv, p. 1446.)

and particularly when the eruptive rock is of a granitic nature, the extent of the modified zone, as well as the more complete changes that have taken place, denote a much more energetic action.

Not only the extent of the modified zone varies according to the nature of the eruptive rock, but for the same rock, and in the same country, this extent presents great differences.* Near the granite it is often of some hundred yards, and, exceptionally, even 3,000 yards: for instance, in the environs of Christiania this band is on an average 360 yards; in the Pyrenees it attains 1,500 yards, perfectly characterized in its effects.† In general, it is remarked that the transformation has extended further between the re-entering angles formed by the eruptive rock than opposite the salient parts.—(Champ-du-Feu in the Vosges,‡ environs of Christiania.) With regard to the nature of the modifications undergone by the surrounding rocks, they are so various that it is difficult to give a summary of them.§

Sometimes only a new molecular arrangement has taken place; limestone has become saccharoidal like statuary marble; elsewhere sandstone has been changed into quartzite.—(Isle of Sky.) The mineral combustibles have generally been modified by losing a part of their constitutive elements.|| It is thus that lignite has been changed into coal, into anthracite, and sometimes even into graphite, (graphite mined in the tertiary formation at Omenatk, in Greenland, in which formation it is also known in Java.) Coal has sometimes been changed into one of these two last states, (graphite of Scotland, graphite and anthracite of Worcester, Massachusetts.) More rarely coal and lignite have been transformed into a kind of coke.¶ Bitumen, accidentally isolated from these combustibles, has been lodged in the rocks which were more or less near.—(Lobsann, in the Bas-Rhine, Hering, in Tyrol.) Most frequently new crystalline combinations have been developed, either with the pre-existing elements of the rock, or by the aid of new elements which have been introduced, or by the elimination of some of those which were originally there.**

* The chalk of the northwest of Ireland, near certain veins of trap, is not modified in the least; it has, on the contrary, become crystalline near those that are very large; in this last case the modification rarely extends beyond three yards. The same rock forms veins in the Isle of Sky, in Scotland; near some of them the lias is modified, whilst it is not at all affected near others, nor are we able to account for the cause of this difference.—(*Karsten's Archiv.*, vol. 1, 2d series, p. 99.) The rocks of the transition formations of the Vosges, into which granite has penetrated in veins, presents still greater differences; sometimes the modification is imperceptible, as in the valley of Wesserling; sometimes it is very distinctly marked, as at Andlau and at Barr.

† Durocher, memoir cited above.

‡ The transition formation is modified in a manner much more complete and over a greater expanse at the top of the valley of Barr than in the valleys of Villé and d'Andlau; and this appears to result from the fact that, instead of simply bordering on the granite, it forms in the first locality a long band, which is as it were let in between the granite and the syenite.—(*Description Géologique du Bas Rhin*, p. 54.)

§ *Annales des Mines*, 5th series, vol. xii, p. 89.

|| Which does not prevent them from often having acquired new minerals like the other rocks, as the zeoliths, for instance.

¶ This last transformation, pointed out near Newcastle, for instance, has not as yet been observed in the proximity of granitic rocks.

** It is this last that appears to have happened in the granular quartz of Brazil.

Among the minerals which are most frequently formed in argillaceous schists are macle, or chiostalite, staurotide, disthene, mica belonging to two species, which is often in very small spangles; the feldspars, orthose, and anorthite; amphibole, which is sometimes sufficiently abundant to constitute an amphibolic schist,* tourmaline,† &c. These minerals are generally found in the neighborhood of granite. It is chiefly in limestone that a great variety of minerals have been found, among which I will mention garnet, idocrase, amphibole, wollastonite, epidote, paranthine, dipyre, couzeranite, magnesian mica, gehlenite, chondrodite, spinel,‡ serpentine, talc, chlorite, seladonite, the zeolites, certain clays, &c. These different minerals do not, however, belong exclusively to calcareous rocks.§ Thus the zeolites are found not only in limestones, but also in argillaceous rocks, sandstones, and sometimes even in mineral combustibles, when these rocks have been traversed by eruptions of trap.|| In the neighborhood of all kinds of eruptive rocks, granite and others, quartz is often accumulated, either in crystalline or compact masses, or as jasper.¶ This ubiquity belongs, also, to other minerals of metallic veins, such as the carbonates with lime, magnesia, and iron, as bases, sulphate of baryta, fluor spar, and specular iron.** As examples of this action, the varieties of which are numberless, I mention the classic locality of the Hartz, where the schist that borders on the granite (hornfels) contains mica, feldspar, tourmaline, chlorite, garnet;†† Cornwall, where effects of the same kind are produced;‡‡ the Vosges,§§ the Pyrenees, Britanny,||| Norway, &c.

Sometimes the rocks bordering on granite or syenite are modified to such an extent that they themselves assume the character of eruptive rocks. Thus, in the Vosges, argillaceous schist passes by insensible gradations to a feldspathic rock, which is sometimes porphyroidal, and to green porphyries studded with anorthite and amphibole. Similar facts have been observed in other countries.¶¶ The transformed rock often becomes amygdaloidal; in certain parts of Ger-

◦ Environs of Christiania.

† Hornfels in the Hartz.

‡ Monzoni, Somma; the silurian limestone of Sparta, in the United States.

§ Some, however, as wollastonite and gehlenite, have as yet only been found in limestone.

|| Tertiary limestone of the conglomerate of Puy de la Piquette, marls of the Cyclops islands, containing beautiful crystals of analcime, argillaceous schists of Andreasberg, in the Hartz, and of the Isle of Anglesey, tertiary sandstone of a vitrified appearance in Wildenstein, in Veteravia. Zeolites have even been formed in granite, near veins of basalt which traverse it, in the Isle of Arran, for instance.—(Boué — *Essai Géologique sur l'Ecosse*, p. 499; and at Haustein, in the Forêt-Noire; (Schill, *Neues Jarbuch*, 1857, p. 36.)

¶ Tuscany, Greece, Ural, &c.

◦◦ Sometimes quartz has been simply isolated by the decomposition of pre-existing silicates, as we shall see in the third part; sometimes it results, as in the other gangues of metalliferous veins, from a manifest deposit.

†† According to Hoffman and Zincken.

‡‡ De la Beche.—(*Geological Report on Cornwall*, p. 267.)

§§ Daubrée.—(*Description Géologique du Bas Rhin*, pp. 32 and 52.)

||| According to the pre-cited memoirs of Palassou, Dufrénoy, and of Durocher.

¶¶ *Bulletin de la Société Géologique*, 1st series, vol. vii; *Comptes Rendus*, vol. xix, p. 857; *Reisnach Oural*, vol. ii, p. 185.

many it there bears the name of *schaalstein*.* We know, moreover, that the eruptive rock itself often undergoes modifications in the neighborhood of the enclosing rocks.†

The different transformations which I have been noticing form, so to speak, irregular aureoles around granite and the other eruptive rocks. Elie de Beaumont has shown that, according as the rock is acid, that is, contains an excess of silicic acid or basic, the metaliferous deposits in connexion with it present two distinct types. The same is true of the metamorphic aureoles of which I have just spoken, and the observations of Delesse have contributed to prove it. Thus, on the one hand, the zeolites which have so often been found near trap rocks have not been found near effusions of granite.‡ On the other hand, this last rock produces certain minerals, to the exclusion of all others, such as, for instance, the aluminous silicates, known under the name of macle and staurotide, so common in the argillaceous schists of Brittany. Micaceous and feldspathic schists very frequently envelop granite to a great depth in the Pyrenees and elsewhere; we do not know of anything analogous near the traps.

CHAPTER II.

REGIONAL METAMORPHISM.§

I repeat that I am speaking here of the schistose masses whose metamorphic origin is clearly proved; consequently I refer to the third part of this memoir, the examination of primitive gneiss, mica schists, and other subordinate rocks, which are inferior to the stratified fossiliferous formations. Considerable masses of stratified rocks, occupying entire counties, often exhibit very marked traces of metamorphism, even when it is impossible in these formations to discover the least outcrop of eruptive rocks.|| This modification is easily verified in countries where it has been of so feeble an intensity as not to have entirely destroyed the sedimentary character of the rock; such are Wales, the Taunas, and the Ardennes. In the silurian and devonian periods of this last locality the rocks have in part become schistose, and over

* These amygdaloidal rocks frequently pass to fossiliferous limestones, and often themselves take the form of a conglomerate. (Steingraben, in the Vosges, Nassau, county of Brilon in Westphalia, where they are associated with a Labradoric porphyry; Paimpol, in Brittany, Lake Superior, and Nova Scotia.) Certain spilites of the Alps and of l'Esterel are considered as metamorphic by Mr Gras.

† Whence the name of *endomorphism*, proposed by Fournet; often, according to Delesse, it is impregnated with a magnesian hydrosilicate.

‡ Durocher; memoir cited above, p. 607 and 614.

§ The name of regional metamorphism, which I have proposed, appears to me more exact than *normal* metamorphism, and less vague than that of *general* metamorphism.

|| The difference in the nature of mineral combustibles, lignite, coal, anthracite, which varies according to the formation, may be considered as an example of a metamorphism that has taken place without the intervention of eruptive rocks; it has acted, perhaps, on more impressionable substances than rocks. It is on this account that anthracite only is found in the Alps and in the talcose schists of the Basse-Loire, and that the eocene formation of Tuscany contains a real coal.—(*Monte Bamboli*.)

a great extent chlorite, in innumerable microscopic crystals,* has been formed between their lamellæ; feldspar has also sometimes been introduced; furthermore, a multitude of quartz veins, some parallel to the lamellæ and others oblique, have been isolated within them, and these veins themselves often contain the minerals which have just been cited; lastly, sandstones have been changed into quartzites.† Now we can hardly admit that stratified and fossiliferous formations could have originally possessed those mineralogical characters, and hence it is conceded by all that they owe their present nature to a transformation undergone since their deposition.

But when the same phenomenon presents itself under a more advanced phase, it needs a more attentive examination to authenticate it, nor is it always possible to attain a certainty, because the primitive type has been more or less completely effaced by chemical action posterior to the formation of the sedimentary rock. Thus, in the immense masses of crystalline rock of the Alps, we find, as in the Ardennes, a chlorite schist with veins of quartz and often of chlorite, but it is in general more perfectly crystallized. (Zillerthal, in Tyrol, Salsbourg.) It is associated with a series of other crystalline rocks, of various natures, which alternate irregularly among themselves, especially talcose schist, green schist,‡ amphibolic schists, and even some schistose diorites,§ talcose gneiss, (described by Saussure under the name of veined granite,) quartzite,|| calcareous and often micaceous schists, more rarely dolomites and gypsum, also studded with a variety of minerals. (Environs of Airolo.)¶ Yet, notwithstanding the peculiarly crystalline character of the rock, the greater part of the geologists who have described the Alps have considered them as of sedimentary origin.

The conclusion that certain crystalline and very extended formations, such as those of the Alps, are metamorphic, rests upon many evidences which are, however, very nearly of the same order with those which prove the metamorphism that has taken place in the neighborhood of eruptive rocks. I mention the following:

1. The analogy of composition which unites certain groups of crystalline with sedimentary rocks is at this day still striking, notwithstanding the modifications which the first appear to have undergone. We find, in effect, as in the sedimentary rocks, beds of limestone,

* M. Sauvage discovered by analysis the existence of chlorite, even in those varieties of phyllades where the naked eye cannot distinguish it. It is under these same conditions that sericite is found in the schists of Taunus.

† *Explication de la Carte Géologique de France*, vol. i. p. 77. Durocher; memoir cited above, p. 603.

‡ The rocks named *green schists* by Mr. Studre, and which are certainly metamorphic, have been recently carefully examined by Mr. Rath. They are of a very variable composition, and often contain aligoclase and albite.—(*Zeitschrift der Deutsch. Geol. Gesellschaft*, vol. ix, p. 211.)

§ We have before mentioned that the schistose diorites of the Ural are generally considered as metamorphic.

|| *Transactions of the Geological Society of London*, 1st series, vol. iv, p. 264; 2d series, vol. i, p. 53; *Cosmos*, vol. i, p. 305.

¶ Serpentine itself, in certain of its formations in the Alps, the Ural, the Alleghanies, and elsewhere, appears to result from the metamorphism of different amphibolic and other rocks, as numerous observations prove.

of dolomite, of gypsum, of a quartzose rock or quartzite, in fine chloritic and talcose schists, which it would often be impossible to distinguish from rocks of the same character, belonging to a well-characterized silurian formation. I will also call to mind, as Bischof has observed, that the elementary composition of certain argillaceous schists of the transition formations is often very perceptibly the same as that of granite and of gneiss.

2. The same country will present instances of the passage, unquestionably gradual, of crystalline into stratified fossiliferous rocks. These insensible transitions, which prevent the establishment of a line of demarcation between these two categories of rocks, and that suggested to Werner the name of *formation of transition*, (*Uebergangsgebirge*), which he gave to the group in which they occur most frequently, have been too often described to make it necessary to enlarge on this subject*. There are localities, however, especially in the Alps, where crystalline rocks are inserted in the midst of sedimentary rocks, which are but slightly modified.

3. We know that the crystallization which has taken place in proximity to eruptive rocks has not always effaced the trace of fossils. Distinct vestiges of them still exist in the midst of rocks studded with crystalline silicates. It is sufficient to cite the fossiliferous silurian limestone of Norway, which at Brevig contains paranthine and garnet, and at Gjellebeck amphibole with epidote, the jurassic limestone of Angoumert, in the Ariège, containing dipyre; the schists of Brittany, so well described by M. Boblaye, of which the same specimens contain macles of several sixteenths of an inch in length, with orthids, spiriferes, and calymenes; the white sub-crystalline limestone containing encrinites, discovered in the Ural, on the borders of the river Miask, by Murchison and de Verneuil, in the midst of a region of granite, serpentine, and metamorphic rocks;† in fine, the amphibolic rock of Rothau, in the Vosges, in which polyps, without changing their form, have been replaced by crystals of amphibole, garnet, and axinite.‡ The same thing occurs in the masses of crystalline formations which we are now considering. Since the instance cited by Brochant: De Charpentier, Lardy, and Studer, have discovered in the neighborhood of St. Gothard belemnites in the midst of a micaceous schist containing garnet.§ The possibility of a transformation appears, however, proved by the blocks

* Among the numerous examples that we could cite, it will be sufficient to mention Brittany, (*Explication de la Carte Géologique de France*, vol. i, p. 234;) Saxony, where these transitions have been remarkably well described by Naumann; the Alps of Dauphiny, of the Tarentaise, of Switzerland, of Tyrol, of Saltzbourg, of Carinthia, according to Brochant, Elie de Beaumont, Sismonda, Gras, Lory, Studer, Escher, Lardy, Favre, Murchisson, Credner, and many others; the Ural, according to Murchisson and G. Rose, and the United States, according to Lyell.

The green schists in the different parts of the Alps (Grisons, Piedmont, &c.) form the passage between rocks evidently sedimentary and those that are crystalline.—(*Studer, Physikalische Geographie*, vol. i, p. 148.)

† *Russia in Europe and the Ural Mountains*, vol. i, p. 420.

‡ *Annales des Mines*, 5th series, vol. xii, p. 318.

§ Particularly at the Col de la Nufenen, near Airolo. M. de Charpentier, as long ago as 1822, found belemnites in the supposed primitive limestones of the Col de Seigne.—(*Cosmos*, vol. i, p. 541.)

which come from Mount Somma, where there is every description of transition, from the compact limestone of the Apennines, containing pectunculus, to the lamellar limestones and to dolomites, filled with crystallized silicates.

4. In rocks in which the crystalline state is still more distinctly marked, where no traces of animal forms are any longer to be seen, the remains of plants are sometimes preserved. We find, for instance, vegetable imprints in feldspathic and micaceous rocks, which are so crystalline that they might be mistaken for eruptive rocks, especially if they were to be determined by isolated specimens. Such are the feldspathised grauwacks of Thann, the schists of Bus-sang, in the Vosges, the *pierre carrée* of the banks of the Loire, which is frequently associated with anthracite, rocks which are assigned to the carboniferous or anthracite formation.

5. When the forms of the vegetables themselves are no longer found, these schistose crystalline rocks often contain carbonaceous compounds which, in all probability, are of organic origin. It is thus that the micaceous schists of Ariolo, which are studded with garnets and long prisms of amphibole, still contain, according to an assay that I made of them, as much as 5 per cent. of carbon;* the same is true of many slaty schists†.

It follows, from what precedes, that it would be difficult to establish a distinction between metamorphism of juxtaposition and regional metamorphism, if we were to judge by mineralogical characters only; the two phenomena differ principally in the extent of their action. It is chiefly in the lower beds of the series of stratified formations that the effects of regional metamorphism are remarkable.

A splendid example of the transformation of the palæozoic formations occurs in the Ural; the sedimentary origin, and the age of the crystalline schists which compose it, have been placed beyond question by the admirable work of Murchison, De Verneuil, and Keyserling.‡ The very feebly consolidated silurian formations of Russia, in these mountains are transformed into crystalline schists, which have here and there preserved, as if to prove their origin, strips of fossiliferous rocks. The same is true of the carboniferous formation. The white and soft limestones of Moscow are found in the Ural with the same fossils. (*Productus gigas* and *Spirifer mosquensis*,) but under the form of a hard, dark, and crystalline limestone. Regional metamorphism, however, is not exclusively confined to the primitive formations, and, on the other hand, it does not, of necessity, belong to them. Thus, on the one side, we find schists that have become crystalline as high up as the beds containing belemnites, and even in the nummulitic formation, (as in the Grisons.§) On the other

* After having removed the carbonate of lime by an acid, the carbon was determined by the oxide of copper, as in organic analyses.

† It is very possible that the bituminous matter found by M. Delesse in the protogine of Mount Blanc is of organic origin.

‡ *Russia*, vol. i, pp. 402, 438, and 465.

§ According to Sir R. Murchison, these rocks are allied to gneiss.—(*Geological Quarterly Journal*, vol. v, p. 211, 1848.)

hand, some silurian formations are hardly modified at all, even in their inferior beds, as we see in Russia, Sweden, and in the United States.*

The remarkably crystalline state of many palæozoic formations should not, then, be exclusively attributed, as has been supposed, to a certain peculiar position in which the earth was at the time of their deposition, but in reality to peculiar agencies which have affected certain regions in preference to others.

CHAPTER III.

METAMORPHISM OF STRUCTURE.

Many masses of rock can be more or less perfectly divided into parallel lamellæ.† These lamellæ are not caused by a cleavage of crystallization, nor are they owing to stratification. The plane of the lamellæ is frequently oblique to that of the beds. There are countries, however, where the transversal disposition is exceptional, and where the lamellæ are generally parallel to the stratification.‡

This lamellar structure is particularly developed in argillaceous schists or phyllades, but it is not exclusively peculiar to them; it belongs to rocks of different natures, such as quartzites, sandstones, limestones, especially when they are impure. Different circumstances show that lamellar rocks have undergone mechanical action, particularly energetic pressure, which has produced upon them indelible effects. The greater part of the fossils which they contain have been compressed and drawn out in a very characteristic manner. It is to the slips which have resulted from this pressure that the lamellar structure appears to owe its origin, as is confirmed by the experiment which we shall presently cite.

Certain peculiarities of structure, less marked than the cleavage, result likewise, without doubt, from mechanical action. Such are the *secondary joints*, known to those who work slate;§ the fibrous structure which results as if from a folding of the lamellæ;|| the structure called pseudo-regular, which occurs frequently in quartzites and coal. These different methods of division are therefore to be also mentioned as a metamorphism of the kind we are describing. The abnormal schistose

* According to the very recent observations of Sir R. Murchison, metamorphism has played a more important part than was suspected in the constitution of the silurian formation of Scotland.

† Often the joint is not more distinct in the rock before it is brought out by a shock than cleavage in crystals; it is, as it were, latent, as we see in the slate quarries.

‡ This habitual parallelism has been noticed in the Hartz, in Saxony, in Brittany, in Scotland, in Devonshire, and in the system of the Rhine, by Hausmann, Naumann, Durocher, Macculloch, De la Bèche, Baur, and De Dechen.

§ The chief of these secondary joints is called *longrain* by the quarrymen of the Ardennes.

|| The bacillary structure of some limestones of the Alps, such as those of Klam, in the Tyrol, is an example of it.—(*Favre; Géologie du Tyrol Allemande; Bibliothèque de Genève*, 1849.)

De la Bèche has given examples of these divisions in his *Geological Report of Cornwall*, p. 271.

structure, or, in other words, the lamellar structure, which does not owe its origin to stratification by deposition, although it is of frequent occurrence in the primitive formations, is not always found there, nor is it peculiar to them. On the one hand, we do not find real phyllades in the silurian formations of Sweden, of Russia, or of the United States, which have remained horizontal, and which have been mentioned above as in general not being metamorphosed. On the other hand, the schists suitable for being quarried as slates are found in the more recent formations which have been dislocated, as in the cretaceous formation of the Pyrenees and of Terra del Fuego,* and in the nummulite formation of Switzerland, in the environs of Glarus. Thus the origin of the lamellar structure, as of the metamorphic state, appears to be essentially connected with the existence of dislocations.

CHAPTER IV.

DOLOMITE, GYPSUM, ROCK-SALT, SULPHUR, AND BITUMINOUS DEPOSITS IN THEIR RELATIONS WITH METAMORPHISM.

We know that certain dolomites result from the transformation of limestone.† This epigeny may be explained, as the synthetical experiments which have been produced upon this subject tend to show, by the action of combinations of magnesia on carbonate of lime. There is, however, nothing to prove that this transformation into dolomite has always been produced by the same agents, and that the dolomite of Campo-Longo, for instance, with its tourmalines, its corundums, and its various minerals, is to be assimilated with the dolomite of the other parts of the Alps‡ and of Nice, or those which are near the deposits of calamine in Belgium.

But there are dolomites, and this is the case with the greatest number, situated in regular beds, which are often horizontal, constituting very extensive geognostic formations. When they contain remains of testaceous molusca the shell has disappeared; they are often crystalline and riddled with holes in such a way as to suggest a substitution. It is possible that the principal part of these last dolomites was directly precipitated.§ But on account of the disappearance of the shells we must admit, with Elie de Beaumont, that this second case allies itself with the first, by the reaction which the medium in which the precipitation has taken place, has exerted on the matter precipitated, a reaction of such kind that the carbonate

* According to Mr. Darwin.

† To the simple exposition of facts I will add in these three chapters a few theoretical considerations. This will exempt me from recurring to these phenomena in the third part.

‡ See especially the memoirs of Studer and his *Physikalische Geographie*, vol. i, p. 146.

§ *Annales de Chimie et de Physique*, vol. xxviii, p. 710; *Erdmann Jahrb. für pract. Chem.*, vol. xlix, p. 52, 1850.

of lime has disappeared. Indeed, we notice that pure limestone never alternates with them.

Stratified dolomites are in general associated with deposits of anhydrite and gypsum, rocks which have been also considered as owing their origin to an epigeny;* they likewise frequently accompany deposits of rock-salt. These last three rocks, which have remarkable analogies in their modes of occurrence, have been, like dolomites, referred to two types of formation. Most frequently they are regularly subordinated to stratified formations, of which they constitute a characteristic element, as we see in the trias of western Europe and of Spain, and in the tertiary formations of the Carpathian mountains. Elsewhere there are casual deposits which appear to be directly connected with dislocations, as is admitted in regard to the beds of the Alps of Salzbouurg and of Bavaria, of the Pyrenees, and of Algeria; thus the characteristic of a double origin attributed to dolomites is also found in the gypsums, anhydrites, and rock-salt which accompany them.

A very remarkable character of all formations containing salt, and which also shows the analogies and the singularity of their formation, is the uniform or variegated red tint of the clays, sandstones, and even of certain masses of the salt which compose them. I shall not be able here to reproduce the considerations by which Elie de Beaumont has compared these different connected facts, and has shown that in the mass of waters, which deposited the *marnes irisées*, phenomena analagous in their results to those which accompany volcanic action have taken place.† These red formations often cover perfectly regular beds, the coloration of which presents nothing abnormal; such are the *marnes irisées* which rest upon the muschelkalk. This circumstance, in connexion with the vast superficies which they often occupy, would seem to show that the heat of the earth had only exercised its action upon them in an indirect or circuitous manner, by heating the water of the sea. It would, therefore, perhaps be in virtue of a high heat and a chemical action with which the concentration of chloride of sodium was not unconnected, that the sea itself tinted the saliferous formations, thus leaving, as it were, a witness of a temperature which it had exceptionally experienced at certain epochs and in extensive portions of its basin.

We have just said that the regularly stratified dolomites are attributed to an epigeny of limestone, and that it was at the time of the deposit of this limestone and before it was protected by other depositions that this transformation had taken place; now, precisely

* *Explication de la Carte Géologique de France*, vol. ii, p. 90.

† *Explication de la Carte Géologique de France*, vol. ii, p. 94.

De Senarmont has discovered that peroxide of iron may be dishydrated even in water, at a temperature between 160° and 180° centigrade. This reduction, in an experiment that I made, took place in a saturated solution of chloride of sodium at only 150°.

I also verified, by analysis, that the red part of the variegated clays not only differed from the green parts by the state of combination of the iron, but also by a very much greater proportion of the metal. This observation led me to imitate exactly the ordinary variegations of clays in passing successively vapors of chlorhydric acid and water over hot clay. Some parts of the clay became colorless, while other parts took a red tint at the expense of the first.

the same thing is true of some metalliferous deposits. The schists containing copper of Mansfeld, the formations of lenticular iron ore of the Voulte and of Privas, the beds containing jasper and metallic minerals of the environs of Nontron, have been formed, as M. Gruner remarks, anterior to all the beds which now cover them.* This kind of *immediate epigeny*, in the very water where these different deposits have been formed, appears then to constitute a common character with dolomites, with the reddish and variegated rocks, as well as with many metalliferous beds.

As another relation between these same formations I will further remark, that in strata of various ages metalliferous deposits are often associated with dolomite in such a peculiar way that there can be no doubt that there is a common bond of origin between these two kinds of deposits. We may cite as an example of this fact the masses of calamine overlying the carboniferous limestone of Vielle-Montagne and of Eifel;† those of San Juan de Alcarraz and of the province of Santander, in Spain; the formations of the same metal in Silesia and Poland;‡ the dolomite containing zinc, of England; the small deposits of calamine of central France, such as Durfort, (Losère), Combecave, (Lot,) Alloue, (Charente;) the formations of galena of Alpujarras; the mass of iron ore of Vicdessos and of Canigou in the Pyrenees; the formations of the manganese of Nassau and those of Nontron, (Dordogne,) &c.§

Native sulphur, in its principal formations, is generally associated either by the relation of cause to effect or by the relation of effect to cause, with deposits of gypsum.|| We see this in Sicily, in several parts of Italy, in the environs of Wieliczka in Poland,¶ in Teruel in Spain,** and on the banks of the Volga.†† If the sulphur came from below in the state of sulphuretted hydrogen, as in the solfatares and certain metalliferous deposits of Tuscany, where it is now daily being deposited on the wood-work in the galleries of the mines, and was there partially transformed into sulphate of lime by a more or less perfect combustion; or if the beds of sulphate of lime have undergone an interior reduction, and by a well-known reaction produced sulphur, under the influence of organic matters with which it is very often associated,‡‡ there is in either case a relation of metamorphism or

* *Annales des Mines*, 4th series, vol. xviii, p. 91.

† Max Braun, *Zeitschr. d. Deutschen Geologischen Gesellschaft*, Jahrg, 1857; *Bulletin de la Société Géologique*, 2d series, vol. viii, p. 105.

‡ Memoirs of Karsten, De Carnall, and others on this interesting country.

§ We may include in this enumeration the beds of schist containing copper, of Mansfeld; the beds of sandstone, containing lead and copper, of the Moselle, which appear to have been formed, like those cited above, before all the beds which now cover them.

|| Sometimes also with alunite, and less frequently with sulphate of strontian, as in Sicily.

¶ *Annales des Mines*, 4th series, vol. xviii, 1850.

** The tertiary beds of Teruel, in which the lymnea are filled with sulphur, without destroying the shell, and where this same substance has replaced the fibre in the stem of the *chara*, are well known from the descriptions given by Esquerre del Bayo, Max Braun, De Verneuil, and Collomb.

†† Pallas, vol. i, p. 197 and 202; *Russia*, by Murchison.

‡‡ It is doubtless owing to a phenomenon of this kind that the sheathing of ships in some of the African seas is attacked, as also the fact observed by Captain Wilmot on this coast that there is deposited from the sea a mixture containing nearly an equal weight of organic matter and sulphur.—(*Institut.*, March 13, 1844.)

epigeny between the gypsum and the sulphur. We may remark, however, that the first phenomenon appears to be almost always accompanied by a high temperature, while the reduction of sulphates, even in a state of solution, appears paralyzed by every elevation of temperature capable of stopping the putrid fermentation or the decomposition which organic matter spontaneously undergoes.*

Bitumens and other carburets of hydrogen, according as they are in a solid, liquid, or gaseous state, sometimes impregnate beds, sometimes flow from them, (petroleum,) sometimes escape from the soil, as in the salses, mud volcanoes, and inflammable springs, which are in general only the vents of bituminous deposits.† The different formations of bitumen present as general, or at least, remarkably frequent characteristics:

1. Of being associated with salt bearing formations, (Soultz-sous-Forets in the Bas-Rhin, Landes; salt mines of Teklenbourg, in the north of Germany; decrepitating salts of Wieliczka and other parts of the Carpathian mountains, Brassa, near Spalatro; in Dalmatia, Albania, Persia, China, United States, &c.)

2. Of being situated in the neighborhood of combustible deposits or formations containing beds of vegetable remains, (Lobsann, Basses-Alps; Seefeld and Hering, in Tyrol; Bovey, in Devonshire; Derbyshire, environs of New Castle and of Glasgow, &c.)

3. Of being connected with accidents of igneous origin, both ancient and modern; that is to say, volcanoes or eruptive rocks, (Val de Noto, near Etna; Auvergne; Gaujac, in the Landes, where bitumen flows, at the foot of a peak of ophite, from a saliferous formation containing lignite; Java, Cape Verd,) or of being associated with dislocated formations, (Hering, in the Tyrol, salses of the Crimea, and of the promontory of Taman‡ and of the Caspian sea, which are in the prolongation of Caucasus.)

4. Of being often accompanied by sulphurous hot springs and deposits of sulphur, (permian formation of the Volga, promontory of Kertch, and various localities near the Caucasus, environs of Mosul, in Persia.) These two last circumstances seem to result from the associations of which we have spoken above.

Several of my experiments account for these relations. By submitting pieces of wood to the action of superheated water I have transformed them, in the midst of the water itself, into lignite, coal, or anthracite according to the temperature, and have moreover obtained liquid and volatile products resembling natural bitumens, and

*The reduction of a sulphate to a sulphuret, according to the experiments of De Senarmont, does not take place at high temperatures. Thus the conditions that are favorable to putrid fermentation are also suitable for the reduction of sulphates to sulphurets.

I will add besides that the sulphuret of copper is formed and crystallizes in the hot springs of Plombières, at a temperature of about 70° centigrade, as I have elsewhere announced.—(*Annales des Mines*, 5th series, vol. xii., p. 294.) This phenomenon of reduction explains, perhaps, the origin of some beds of metallic sulphurets, such as the copper bearing schists of Mansfield.

† This last relation is apparent in the Appenines, in Albania, in the promontory of Taman, and in the environs of Tiflis, &c.

‡ *Mémoires de la Société Géologique de France*, vol. iii, 1838.

even possessing the characteristic odor of the petroleum of Bechelbronn. In this way we can understand the presence of bitumen in some concretionary metalliferous veins, (Derbyshire, Camsdorf, Raibl in Carinthia.)

In short, the bitumens are probably derived from vegetable substances;* they appear not to be the products of a simple dry distillation, but to have been formed with the co-operation of water, and perhaps under pressure; graphite would be but the most exhausted product of these substances.† These different combinations of carbon are connected with the transformations which are going on in the interior of rocks, probably under the influence of a high temperature. The activity, and even the violence, sometimes capable of producing a slight earthquake, with which the disengagement of carburetted hydrogen takes place in Tauris, on the borders of the Caspian sea, and in the environs of Carthagera, in South America, prove that the causes which have formerly isolated bitumen are still in activity.

CHAPTER V.

METALLIFEROUS DEPOSITS IN THEIR RELATION TO METAMORPHISM.

Metallic combinations, derived from the interior of the earth, are very frequently accumulated in the clefts which exist in the strata, and have formed metallic veins. Sometimes also these and the various other combinations which accompany them are diffused through the rocks, and in penetrating them have caused them to undergo very decided transformations. It is thus that the masses of specular iron of Framont, the deposits of the Banat, of the environs of Christiania, and of Turjinsk, have been introduced in the neighborhood of eruptive rocks. In these localities the metallic minerals have been intermingled with silicates, produced at the same time with them in the sedimentary rock itself. In this way tin has been introduced in many of the formations where it is now found, reacting profoundly on the surrounding rocks, as I long ago pointed out, and forming in those rocks characteristic minerals.

When entire masses of rock have undergone transformations, it sometimes happens that, over vast extents, metallic substances have been lodged between their lamellæ, under such circumstances that it is impossible to resist the idea that their presence has been intimately connected with the very cause which produced the metamorphism. As an example, I mention gold associated with iron pyrites or with mispickel at Zillerthal in the Tyrol, at Galicia in Spain, where it is also accompanied with tin; but it is especially in the Oural,

* Although Berthelot and other chemists have been able by ingenious methods to obtain by synthesis the compounds which are called organic, nothing authorizes us for the present to believe that this can be done for the bitumens.

† Graphite and bitumen are associated in Java in the neighborhood of volcanic formations, and with lignite in a tertiary formation, from which jets of carburetted hydrogen escape.

in Brazil, and in the Alleghanies,* that these formations, at the same time gold-bearing and metamorphic, attain great dimensions. In short, the metalliferous deposits, as well as the silicious discharges which furrow many countries, are but peculiarities of metamorphic phenomena.

CHAPTER VI.

DECOMPOSITION OF SILICIOUS ROCKS, AND MINERAL SPRINGS.

Causes, which appear to have some analogy with those which have changed the sedimentary deposits into crystalline rocks, have often produced an inverse effect, and have transformed silicious crystalline rocks into hydrated silicates; sometimes earthy and amorphous, such as clays, steatite, seladonite; sometimes crystalline, as the zeolites. We know, especially since the researches of Ebelmen, how atmospheric agents gradually decompose the silicious rocks.† The carbonic acid of the atmosphere, the nitric acid which is there daily developed, as the very general phenomenon of nitrification proves—in fine, the organic acids resulting from the decomposition of vegetable matter, gradually dissolve out the alkalies and the alkaline carths, and the residues, in which alumina is more and more concentrated, finally become hydrosilicates of alumina of the family of clays. But it is not alone in the neighborhood of the atmosphere that clays may have been derived from the transformation of crystalline silicious rocks. Volcanic fumaroles often reduce the masses through which they pass into real clays, ordinarily variegated, (Lipari islands, Solfatares of Pouzzoli, Iceland, Azores, Kamtschatka.)‡ This is, without doubt, the origin of the mud sometimes thrown out by the great volcanoes of the Andes. Carbonic acid, as Fournet long ago discovered in Auvergne, itself suffices to produce analogous decomposition. The alkaline solutions which many hot springs contain, those of Plombieres, for instance, appear to decompose the silicious rocks as effectually as the acids of the fumaroles.

Like effects are often found in the neighborhood of metalliferous deposits. Thus the beds of kaolin, in Saxony, certainly result from a decomposition of granite near veins of iron, which traverse it; this example may be considered as the type of many facts of the same kind.§ The various masses of kaolin which are worked in Cornwall

* A recent memoir of Leiber on this country gives interesting and detailed accounts.

† I can only mention here the important labors of Fuchs, Berthier, Forchhammer, Turner, Fournet, Al. Brongniart, Malaguti, and others on this subject.

‡ According to the observations of Breislack, Hoffman, Bunsen, Darwin, and others. Charles Deville has explained by an experiment this reaction of sulphuretted hydrogen on rocks.

§ Sosa, in Saxony, near a vein of quartz containing iron ore; environs of Alençon, near a vein of quartz; deposits of the Loire, according to Gruner and Rozet; decomposed feldspar of the arkose of central France, &c.; halloysite of Louhassoa, near Bayonne; kaolin of Eschassieres, (Allier,) in feldspathic porphyry, according to Boulanger.

It was facts of this kind that induced Brongniart and Malaguti to attribute the decomposition of feldspar to voltaic action.

are also associated with deposits of tin; they bear, as long ago remarked, the date and trace of their origin, in the substitution of oxide of tin and of tourmalin for the crystals of feldspar which have been dissolved. The kaolin of Middletown, in Connecticut, situated near silicates containing fluor and columbite, probably result from a like action.

These last facts authorize us to think that analogous phenomena must have produced the decomposition of crystalline rocks into kaolin, even where we do not now find any traces of metalliferous deposits; for, in this case, it is possible that the waters which have acted did not contain any metallic solutions. Thus the granite of the Vosges is often altered to a very great depth, especially at Plombières. Sometimes even, as I have elsewhere shown, the decomposition and regeneration of feldspar have often taken place at neighboring points, thus constituting, as it were, two complementary phenomena.*

It is, perhaps, to agencies of the same character that we must attribute the transformation of entire masses of feldspathic porphyry to clay, which has caused this variety to be called in Germany *thonporphyr*; the crystals of feldspar, although perfectly formed, are in general nothing but kaolin.

The springs of Plombières, which have afforded us examples of the production of minerals, also show that some hydrosilicates of alumina of the group of clays do not originate from a decomposition in position. Halloysite, (or savon de Plombières,) of which these springs bring the elements in solution from the interior of the earth, is deposited in the channels of the springs like a true chemical precipitate.† A similar origin may be attributed to the halloysites, lithomarges, and other hydrosilicates of alumina, which in central France, in the Hartz, in Saxony, and elsewhere, often accompany the metalliferous deposits bordering upon granite.‡ We shall show further on that the zeolites also are often the result of a real epigeny.

With regard to the frequent substitution of the silicates of magnesia, steatite, serpentine, and talc, or chlorite, for different minerals, it appears to result from processes of transformation, not without analogy with those which we have just been considering.§

If we take metamorphism in the most extended sense of the word, some phenomena of a superficial origin would perhaps be found indi-

* *Annales des Mines*, 5th series, vol. xii, p. 315; 1857.

† *Bulletin de la Société Géologique de France*, 2d series, vol. xvi, p. 567.

‡ *Annales des Mines*, 2d series, vol. iii, p. 255; 3d series, vol. iii, p. 393.

Halloysites with manganese, near Nontron and Thiviers; with galena and calamine, at Villefranche, Angleur near Liege, Vieille-Montagne, Tarnowitz; with oxide of iron, at la Voulte; with oxide of tin, at Ehrenfriedersdorf, Zinnwald, &c.

§ Attention was long ago directed to the epigenies, of which we know remarkable examples at Gopfersgrun and Thiersheim near Wunsiedel in Franconia; at Snarum in Norway; at Predazzo in Tyrol; in Canada, and in the crystalline rocks of the Alps, including protogene. Blum, Bischof, Volger, and others have made numerous remarks on the probable origin of these interesting substitutions.

The hypothesis of an epigeny is confirmed by an observation made by de Senarmont, that crystals of serpentine, cut in thin plates, allow the light to pass without giving it any of those properties which characterize a true crystal, and which, consequently, do not belong to crystals *sui generis*.—(*Annales des Mines*, 5th series, vol. viii, p. 495.)

rectly connected with the subject which occupies us; as the precipitation of iron ores in bogs, the production of nitrates, the formation of carbonate of soda at the bottom of lakes and that of clay stones, the decomposition of pebbles into kaolin, &c. But it would be difficult here to embrace in their whole extent these incipient transformations which are, as it were, the life of the inorganic world. I shall confine myself to activities of a *deeper origin*.

THIRD PART.

THEORETICAL CONSIDERATIONS ON THE CAUSE OF METAMORPHIC PHENOMENA: SYNTHETICAL EXPERIMENTS IN SUPPORT OF THEM.

In the theoretical considerations which I am about to present, I shall first treat of those rocks whose metamorphic origin is demonstrated by the circumstances in which they are found. The oldest crystalline rocks, which have also been sometimes considered as metamorphic, but without the same corroborative proofs, will be the subject of an appendix which terminates this essay. With regard to dolomites, and the rocks which are connected with them, I shall add nothing to the facts and explanations which I have noticed in the second part.

CHAPTER I.

INTERNAL HEAT; ITS EFFECT ON METAMORPHISM; IT IS NOT SUFFICIENT TO EXPLAIN ALL THE PHENOMENA.

The modifications undergone by the formations comprised under the name of metamorphic have incontestably taken place at a higher temperature than that which we now have on the surface of the globe. We can infer it, in the first place, from the single fact of the mineralogical analogies which these formations have with the eruptive rocks, and especially the presence of numerous anhydrous silicates, which forms one of their most remarkable features; in the second place, from their evident relation to the dislocations, whose starting point is always in the interior regions of the earth, and which incontestably are referred to the internal heat of the globe as a first cause.

The heat of the globe necessarily decreases from the centre towards the surface, and consequently when the sediments deposited in the ocean at the relatively low temperature which exists in its deeper parts were afterwards covered by other beds, they must have acquired a greater degree of heat by reason of their greater

remoteness from the surface of radiation.* The superposition of heavy detritus, as in some stratified formations, was often sufficient to cause a notable increase of the heat of the masses beneath, after their deposit, especially at epochs when the increase of heat, in a vertical line, was subject to a much more rapid law than now.

This observation may be added: that the bottom of the greater part of the ocean does not now appear to exceed the temperature of from three to four degrees centigrade, owing to the single fact that a sedimentary deposit would be dried up in the temperate regions, and that its surface would consequently gain several degrees of mean temperature, all the points situated on the same vertical should increase in temperature equally.† Thus the regular propagation of the heat of the globe might have acted upon entire formations, and produced upon them a gradual transformation which Elie de Beaumont characterized under the name of *normal metamorphism*.

Setting aside the effects of this general, and, as it were, latent cause, there are circumscribed places where the heat has come very near the surface, especially in the suite of eruptive rocks. Hence there are special centres around which internal heat has produced *accidental metamorphism* or *metamorphism of juxtaposition*. Nevertheless there are very strong reasons for thinking that in both one and the other case it is not heat alone that has acted. Even when the temperature was sufficiently high to produce a softening of the transformed rocks, which is most frequently altogether improbable,‡ it would be insufficient to explain the diversity of effects which have been ascertained. The following observations prove it: If heat alone is the cause of the modifications observed in formations, the thickness of which is often more than a thousand yards, how did its action penetrate through such an extent? Why, at least, in accordance with the known laws of the propagation of heat and the feeble conductability of rocks, is it not of incomparably less energy in the remote parts than in those near the surface by which it arrived? This, however, is not the case, and the grandeur, as well as the uniformity of effects produced in entire mountainous masses is a phenomenon of the most striking significance.§ Moreover, if, setting aside the relations of the general whole, we pass to facts of detail, we still find in the manner of grouping of the minerals of the metamorphic rocks a multitude of circumstances of association or of formation which forbid our admitting for those minerals an origin due to heat alone. To cite an example, I will mention the very frequent occurrence of

* This remark is due to Mr. Babbage, (*London and Edinburgh Philosophical Magazine*, V, 213.) Sir John Herschel has made some experiments on the chemical reactions which the strata have undergone owing to this ulterior elevation of temperature.—(*Leonhard's Jarbuch*, 1838, p. 98; 1839, p. 347.)

The bottom of the sea being at a low temperature, Hutton's idea of the heating of the sedimentary deposits cannot be admitted in the terms in which he described it.

† According to an observation of Sir John Herschel, noticed above.

‡ Bischof and Durocher have insisted upon arguments of this kind.

§ Often, also, in metamorphism of juxtaposition, it is not always in the parts the nearest to the contact of the eruptive rocks that the effects have been most energetic. Durocher has given several examples of this kind.

crystallized silicates of alumina, as chiastolite and staurotide, in the midst of phyllades containing fossils, as well as that of garnet, pyroxene, or feldspar in limestone, also of sedimentary origin, which very often are not sensibly modified. Heat, and the crystallization which is a consequence of cooling, might, it is true, cause a separation or liquation between substances which were primitively dissolved, the one in the other. It is thus that carbon is separated in crystals from cast iron in the state of graphite. But direct experiment shows us nothing analogous to the development of isolated crystals of garnet, pyroxene, feldspar, and disthene, by the agencies of heat, in a calcareous gangue, which has not even been softened, and which, according to all appearances, has been very feebly heated.* We can conceive that the slow agencies which nature often employs to form mineral products are perfectly capable of producing results which man is entirely unable to imitate; but have we the right to seek for explanations which there is nothing else to justify, exclusively, in the duration of time and in vague causes which are, so to speak, occult?

The same mineral is often found entirely isolated and crystallized in very different matrices; tourmaline, mica, feldspar, garnet, and epidote, for instance, are often found with the same characters in the midst of quartz, or imbedded in limestone or dolomite. This independence of the silicates in relation to their gangue appears to show that minerals are not the simple products of liquation, since media so different would not have secreted identical combinations. Besides, we meet everywhere in metamorphic rocks with minerals very unequally fusible, which have crystallized in a succession entirely opposed to the order of their fusibility.

Arguments of various natures, therefore, oppose themselves to the admission that a metamorphism having no other cause than heat could have given rise to the minerals that we find in the rocks which have undergone its action, even when they do not appear to contain simple bodies foreign to their primitive normal condition. But how much more is this conclusion to be relied upon when we see, as in Brazil, the altered condition of the rocks visibly coincide with the introduction of peculiar bodies, which, according to all probability, could not have come there until after their formation.

CHAPTER II.

OF CERTAIN VAPORS CONSIDERED AS AUXILIARIES TO HEAT; THEIR ACTION COMBINED WITH HEAT IS STILL INSUFFICIENT.

If heat alone could not produce the effects of which we have just spoken, will its action, aided by certain bodies, either gaseous or

* The association of graphite, with the silicates having protoxide of iron for a base, as mica and amphibole, could not have taken place at a high temperature, (*Bischof's Geologie*, vol. ii, p. 60,) for at the least a partial reduction of iron to a metallic state would have resulted. The frequent presence of graphite in limestone led Bischof to the same conclusion, for the two bodies at a high temperature would react the one on the other.

easily reducible to vapor, become sufficient for their explanation? This is the first idea which naturally presents itself to our minds; for nature shows us an abundance of vapors of energetic affinities in the exhalations from the craters of volcanoes or their still incandescent lavas. These vapors and gases are combinations in which electro-negative bodies predominate, which the former mineralogists called, as if by instinct, the *mineralisers*, as chlorine, sulphur, carbon, more rarely fluorine and boron. The recent observations of Boussingault, Bunsen, and Charles Deville, have contributed to make known the nature of these gaseous or volatile ejections.

Carbonic, sulphydric, and even sulphuric acid might formerly have acted on some rocks in a manner similar to what we now see in some formations of gypsum and of alunite, or in the rocks near the volcanoes of the Andes and of Java, which are reduced under their action to mere mud. The decomposition of vapors containing chlorine forms under our eyes specular iron, and might have heretofore given rise in many formations to oxide of tin and of titanium, as both observation and synthetical experiment have taught us. It is in a similar manner that crystallized magnesia or periclase contained in the limestones thrown out of Mount Somma, might have been produced from the decomposition of chloride of magnesium by carbonate of lime. This supposition, which the abundance of chloruretted vapors of the active volcano rendered probable, has been corroborated by an experiment in which I artificially imitated that mineral.* It is remarkable to see the same substances which have produced periclase at the expense of the limestone form, when in solution and at a lower temperature, dolomite. The part which these chlorures at high temperatures have borne in producing the crystallization of minerals is clearly shown from the very recent experiments of Manross, Forchhammer, and Henry Deville.

Other experiments have shown that the chlorides of silicium and of aluminum by reacting, in a state of vapor, on the bases which enter into the composition of rocks, form simple or multiple silicates which are identical with natural products.† But if mica subjected to heat still gives off the fluorides of silicium, boron, and lithium, shall we venture to affirm that granitic pastes did not also originally contain the chlorides of silicium, boron, and lithium, although we do not now find them in the neighborhood of volcanic orifices? for they could not be otherwise than decomposed and precipitated by the vapor of water before arriving in the atmosphere. Do we not still see chlorine fixed in considerable quantities in crystalline masses, as in the syenite containing zircon, of Norway, and in the rock of Ilmen, (miascite,) where it is principally combined with eleolite, and where it appears in the train of zirconium, tantalum, and other rare elements, which are almost exclusively peculiar to those rocks? With regard to fluo-

* Researches on the artificial production of minerals belonging to the families of the silicates and the aluminates by the action of vapors on rocks.—(*Comptes Rendus de l'Académie*, vol. xxxix, p. 135)

† *Comptes Rendus de l'Académie*, vol. xxxix, p. 135.

rine and boron,* I long ago showed that they appear to have been instrumental in the formation of masses of tin.† In effect they enter into the composition of characteristic silicates, as topaz and tourmaline, which were certainly formed at the same time as the oxide of tin.‡

These conclusions are equally applicable to the rocks whose origin is due, according to all probability, to analogous phenomena. Such is the well known rock found at Schneckenstein, in Saxony, where topaz and tourmaline appear to have glided between the divisions of the schists, at the same time cementing, in conjunction with quartz, the numerous fragments into which this schist had been broken. The same is true of entire formations in Brazil, such as those that contain topaz in the county of Villarica—schists in which gold and the diamond with the same characteristic minerals have been found over vast extents of country. These formations are, as it were, but an accumulation over a great space of the habitual gangues of oxide of tin.§ There still remains in granite a sufficiently sensible quantity of fluorine and of boron to allow us to admit that it is possible that this rock, before solidifying, gave off large quantities of vapors in which those two bodies were in combination. These ideas on the intervention of fluorine and boron, which date twenty years back, have acquired still greater value since Henry Deville has crystallized a series of minerals by the aid of the fluorides, and since the presence of fluorine and boron has been discovered in many mineral waters, and fluorine even in sea-water.

We can explain by heat, accompanied by the auxiliaries which have just been mentioned, a greater number of transformations than by heat alone; but with those agents only we cannot explain some very important circumstances, except by attributing to the vapors a part evidently much exaggerated. Bischof, and other savans have clearly substantiated this fact by numerous considerations.||

* The presence of fluor, already discovered in different modern volcanic rocks, has been verified by M. Scacchi in a recent deposit of the fumaroles of Vesuvius. With regard to boron, the enormous quantities which come from the *saffioni* of Tuscany and the extensive deposits of the craters of volcanoes hardly permit us to doubt that it exists in many other localities which have been passed unnoticed up to the present time.

† On the origin and artificial production of oxide of tin.—(*Annales des Mines*, 3d series, vol. xx, p. 65, 1841; 4th series, vol. xvii, p. 129, 1849.)

‡ This first comparison between boron and tin, established on purely geological grounds, has been followed by the discovery of an unexpected analogy between two bodies whose chemical properties are so different. I speak of their isomorphism, which has been demonstrated by the labors of M. Sella.

§ I am very far from thinking that these different quartzose rocks have been formed without the presence of water. I shall presently revert to this subject.

|| How, for instance, can we admit of such an origin for the formation of crystals of feldspar or garnet in regular strata, which are often hardly modified at all?

CHAPTER III.

WATER CONSIDERED AS AN AGENT OF METAMORPHISM.

But in volcanic exhalations there is a body which did not at first attract attention, because under the dominion of former ideas it seemed altogether inert, especially in the presence of minerals whose formation was to be explained. It does not exist in minute quantities like the vapors of which we have just spoken; it is, on the contrary, at the same time, the most abundant and the most constant product in all the eruptions of the globe. This body is water, and we shall see that the most important part was assigned to it in metamorphic phenomena, as well as in the eruptions of volcanoes. The singular property which the incandescent silicates of lavas possess of retaining for a very long period, even up to the time of their solidification, considerable quantities of water, clearly proves that the action of heat does not exclude that of water, and appears also to show that water has even at high temperatures a certain affinity for these silicates.

Of the masses situated at a certain depth in our globe, we only know what is brought up by volcanoes. Now, these ejections all, without exception, contain water, either combined or mixed; we are, therefore, justified in thinking that water plays a very important part in the principal phenomena which have their origin in the depths of the earth. We have seen, in the historical part of this work, that conclusive arguments have caused a most powerful action to be attributed to water, such as the formation of many metalliferous veins, and an incontestable influence in the crystallization of the eruptive rocks themselves, comprising granite. In truth, the hottest lavas, and those which are most charged with water, as basalts and trachytes, do not modify rocks to any considerable depth; but this is, without doubt, owing to the fact that as soon as they are exposed to simple atmospheric pressure, the water escapes by being reduced to the state of vapor. The numerous blocks of limestone in the tufas of Mount Somma, which have come from the seat of volcanic action, show, in their numerous geodes, adorned with such a variety of, and such well crystallized minerals, what rocks may undergo, when, under pressure, they are subjected to the permanent action of certain agents, without which some of these agents would not have acquired their power, and others not even have existed.

Something altogether like this is seen in the little basaltic mass of Kaiserstuhl in the Grand Duchy of Baden.* A strip of limestone, torn off by the action of basalt from the formations which it has traversed, has been modified by it most completely. This limestone has become entirely lamellar, and contains crystals of titaniferous magnetic iron, iron pyrites, magnesian mica, perowskite, pyrochlore, crystallized quartz, and innumerable needles of apatite. The very

* *Annales des Mines*, 5th series, vol. xii, p. 322; Naumann, *Geognosie*, vol. i, p. 791.

exceptional peculiarity among rocks in contact with basalt, which characterizes the limestone of Kaiserstuhl, appears to me to result from the conditions of its formation. This limestone was situated at the bottom of a crater of elevation. Before the last dislocation, undergone by the formation, brought the limestone to the surface, it had been subjected, at a certain depth, and consequently under pressure, to the action of the hot water with which the basalt itself was saturated, and which also deposited minerals in its numberless cavities. The limestones of Mount Somma, so rich in various minerals, and those of Latium, have been produced, like the limestones of Kaiserstuhl, at points where craters of elevation have been formed. When the beds which hermetically sealed the spot where these chemical reactions took place gave vent, in breaking, to the agents which produced them, these reactions ceased to take place. But what difference of action can there be, in the case of which we are now speaking, between what passed on the surface and what took place in the depths of the earth? No other, according to all appearance, than that which is owing to difference of pressure. Let us add, that if the vapor of water which, at a very high temperature, no less than liquid water up to its point of ebullition, fail to produce, in the ordinary experiments on the silicates, results like those which the metamorphic formations present, it is because something essential is wanting, and everything shows that what is wanting is pressure.

In fine, we have just seen on what grounds we may rightfully suspect the concurrence of heat, water, and pressure, as capable of producing the principal phenomena of metamorphism. What is wanting is to place ourselves in conditions resembling, as much as possible, those under which nature appears to have acted, and to see whether the reproduction of characteristic minerals would be obtained. Such is the object of a series of experiments which I have undertaken, and of which I am about to give an account.

CHAPTER IV.

EXPERIMENTS ON THE ACTION OF SUPERHEATED WATER IN THE FORMATION OF SILICATES.

Several of my experiments have been already described in a former memoir.* I have thought proper, however, to reproduce here the principal results which were recorded in my first publication, and to add to them those which I have more lately obtained. Even counting for nothing the dangers of explosion, which are often of a violence altogether surprising,† the difficulties of experimenting have

* *Annales des Mines*, 5th series, vol. xii, p. 289, 1857; *Bulletin de la Société Géologique de France*, 2d series, vol. xv, p. 97, 1858.

† Tubes made of iron of the best quality, having an interior diameter of 0.8 inch and 0.4 inch in thickness, sometimes burst. They break in the direction of one of their generatrices, and are thrown into the air with a noise like the report of a cannon. If the iron

prevented me from multiplying results as it would have been desirable to do. The facts, however, already discovered are conclusive, and show the fecundity of this method of experimenting.

The principal difficulty consists in finding walls and fastenings that will resist for a sufficient length of time the enormous tension which steam acquires when the temperature is raised towards a dull red heat. Water and the matters that are to react are placed in a glass tube, which is then sealed. This glass tube is next introduced into a very thick tube of iron, which is closed in a forge at one of its ends. The other end is often closed by means of a screw, having a square head, which can be turned with a wrench. Between the head of the screw, which should be made with great precision, and the end of the tube a washer of very pure copper is placed; it should be thin enough to be crushed by the pressure when the tube is closed, and penetrate into the grooves made for that purpose. For closing the second extremity, however, I have now adopted another plan in preference; I introduce hot a very strong bolt, which, if the welding is skilfully done, becomes part of the tube. A workman must be very skilful to succeed in this operation; for it is essential that the greater part of the tube remain cold, in order that the water in the interior may not, by evaporating, hinder the operation. To counterbalance in the interior of the glass tube the tension of the steam, which might burst it, water is poured around it, between its sides and those of the iron tube which surrounds it. In this way the principal strain is put upon the latter tube, which offers the most resistance. This apparatus, like those which de Senamont used, is laid on the dome, or in the conduits of the retort-furnace of a gas-works in contact with the masonry, which is at a dull red heat, and is buried beneath a thick bed of sand. At a temperature which is a little below nascent red heat water reacts very energetically on certain silicates.

In this manner ordinary glass, at the expiration of a few days, gives two, and often three, distinct products: 1. A white and altogether opaque mass, which results from the complete transformation of the glass; it is porous, sticks to the tongue, and would look like kaolin if it were not for its very decidedly fibrous structure. The substance has lost a large part of its weight, nearly half its silica, and a third of its alkali; a new silicate has been formed which has fixed the water, and belongs, by its composition, to the family of the zeolites.* 2. An alkaline silicate which has been dissolved, carrying with it the alumina. 3. Often there are developed, in addition, numerous perfectly limpid and colorless crystals, which have the ordinary

had no fault, and we suppose that it preserves at 300° centigrade the same tenacity as when cold, such an explosion would indicate an interior pressure of more than 1,000 atmospheres.

It is to be noticed that, before bursting, the tube swells out into the form of an ampulla of one and a half to two inches in length, and opens in its middle so as strikingly to call to mind the gibbosity of the profile of Etna, with the central notch of the Val de Bove, the origin of which was long since, by de Buch and Elie de Beaumont, attributed to an expansive force of the same kind.

* *Bulletin de la Société Géologique de France*, 2d series, vol. xvi, p. 588. At a higher temperature an anhydrous silicate, which appears to resemble wollastonite, is obtained.

pyramidal form of quartz, and which, in reality, is nothing more than crystallized quartz. Some crystals, thus formed, have attained at the end of a month .07 of an inch in length. Sometimes they are isolated in the opaque paste, sometimes lodged on the sides of the glass tube, where they form veritable geodes, which, with the exception of their size, it would be impossible to distinguish from those so frequently found in crystalline rocks. What renders this transformation of glass still more remarkable, in a geological as well as a chemical point of view is, that it is obtained with a very small quantity of water, which in weight is not equal to a third of that of the transformed glass.

Volcanic glass, known under the name of obsidian, acts in a manner similar to the artificial. Pieces of obsidian, heated under the same conditions, are changed into a gray product of a crystalline nature, having the aspect of a fine-grained trachyte. Its powder, examined under the microscope, presents exactly the characters of crystalline feldspar, and especially resembles rhyacolite or vitreous feldspar. In fact, we know that obsidian greatly resembles feldspar in its chemical composition; favorable circumstances would, without doubt, have determined the reunion of its elements in definite proportions. The tendency of forming in the wet way that feldspar thus manifests is to be taken into account in divers geological circumstances.

With the fragments of obsidian on which I operated there were pieces of vitreous feldspar detached from a trachyte of Drachenfels, and, also, a piece of oligoclase from Sweden. These two last minerals underwent no appreciable change.* We cannot, however, affirm that if the water had not immediately found an alkali to remove from the vitreous envelope it would not have acted upon the feldspar. We here see a kind of a confirmation of the preceding experiment on the stability of the silicates, which have, perhaps, originally crystallized in conditions very similar to those in which they were again placed. The same is very nearly true of thin laminae of the potash mica of Siberia; they hardly lost their transparency. Crystals of pyroxene also do not change their aspect, except that, like the pieces of feldspar and obsidian, they are so completely enveloped with crystals of quartz that it is necessary to break in order to recognize them.

To examine, as far at least as the presence of glass will permit, how the solutions of natural silicates which we usually find in water act when superheated, I used water from the hot springs of Plombières, which is comparatively rich in silicates of potash and soda.

Not being able, however, to operate on more than from twenty to thirty cubic centimetres, I concentrated it beforehand by an evaporation so rapid that the carbonic acid of the air did not sensibly decompose the silicates, and in such a way as to reduce it to one-twentieth of its former volume. After an experiment that was stopped at the end of only two days the sides of the tube were already covered with a silicious coating in the form of crystallized quartz, and also of chalce-

*Feldspar, however, can be decomposed cold by trituration.—(*Annales des Mines*, 5th series, vol. xii, p. 547)

dony. As the glass was as yet only altered on its surface, this deposit must have come, almost all of it at least, from the decomposition of the alkaline silicate contained in the water of Plombières. Thus, without the use of a single chemical reagent, under the single influence of heat, water holding alkaline silicates, such as those of the springs of Plombières in solution, deposits crystallized or crystalline quarts.

A new proof of the facility with which minerals of the feldspar group can be produced in the presence of water is furnished by the following experiment, which I made with a view of explaining the feldspathization of many rocks, even those containing fossils. Kaolin, perfectly purified from all feldspathic debris, by washing, having been treated in a tube with water from Plombières, this earthy mass was transformed into a solid substance, confusedly crystallized in little prisms which scratched glass. After having purified this substance by washing it with hot water, we find that it has become fusible into a white enamel; chlorhydric acid no longer attacks it. It is a double silicate of alumina and an alkali, having all the characters of a feldspar; it is mixed with a little crystallized quartz. The reaction which we have just explained may be compared to the ease with which a cold silicate of alumina absorbs lime in hydraulic mortar. On the surface and in the interior of the whitish mass resulting from the transformation of the tube I found a great quantity of very small crystals, but of a perfectly distinct form, having great brilliancy and perfectly transparent; they had different tints of green, and many of them that olive-green tint which is peculiar to peridot. Their form is that of an oblique symmetric prism, the bases of which are replaced by two bevels; the two opposite edges are ordinarily truncated, as in the pyroxene which Haüy called *homonome*. These crystals scratch glass very perceptibly; they remain unaltered in the presence of concentrated and boiling chlorhydric acid. They melt before the blow pipe into a black enamel. In fine, they have the composition of a *pyroxene*, having a base of lime and iron; and from their transparency, they belong to the variety *diopside*. Some of these crystals are isolated, some grouped together in such a way as to form little globules bristling with points, and more rarely they are under the form of thin incrustations. All of them, by their aspect, immediately recall the best known crystals of diopside.

The clay of Klingenberg, near Cologne, which is used to make glass-house pots, when heated in glass tubes, is covered with a multitude of white, pearly pellicles, possessing the lustre of mica. They are hexagonal, and have an optical axis of double refraction.* They are fusible, and indicate before the blow-pipe the presence of silica. They are attacked by chlorhydric acid, which manifests the reactions of alumina. The quantity of these pellicles that I have obtained has been as yet too small to permit of my making a quantitative analysis. It appears, however, very probable that the substance is a mica of one axis or a chlorite.

* According to an examination which M. de Sénarmont was kind enough to make.

The fossil vegetables having undergone modifications under the influence of the same agents as stony matters, it is proper to see what becomes of wood in superheated water. Fragments of spruce were transformed into a black mass, having a bright lustre, perfectly compact—in a word, presenting the aspect of a pure anthracite ; it was so hard that a steel point could with difficulty scratch it. This kind of anthracite, although infusible, is entirely granulated under the form of regular globules of different dimensions, from which it clearly results that the substance has been melted in the process of transformation ; by calcination it yields only traces of volatile matter ; the ligneous matter has therefore arrived at its last stage of decomposition. This kind of compact carbon burns very slowly, even under the oxidizing flame of the blow-pipe. It differs from the carbons formed at high temperatures in the fact that, like the diamond, it does not conduct electricity. The veins of silver at Kongsberg, in Norway, which are encased in gneiss, contain anthracite which very much resembles the artificial anthracite we have just mentioned. It has moulded itself in the midst of carbonate of lime and native silver, under a form that shows that it has passed through a softened state. At lower temperatures, but in conditions otherwise analogous, wood is transformed into a kind of lignite or coal. In these experiments I obtained, as I have before said, liquid and volatile products resembling natural bitumens, and possessing even their characteristic odor.

To recapitulate: superheated water has a very energetic influence on the silicates ; it dissolves a great many of them, destroys some combinations of multiple bases, and forms new ones, either hydrated or anhydrous ; in fine, it causes those new silicates to crystallize far below their point of fusion. In these changes the silicic acid, set at liberty, isolates itself under the form of crystallized quartz. Transformations so complete are, moreover, obtained with a very small quantity of water. In general we can distinguish this law, that near the point of nascent red heat the affinities of the wet way acquire, so far as concerns the production of silicates, the same character with those of the dry way.

CHAPTER V.

DEDUCTIONS DRAWN FROM THE PRECEDING EXPERIMENTS, FOR THE EXPLANATION OF THE CRYSTALLIZATION OF SILICIOUS, ERUPTIVE, AND METAMORPHIC ROCKS.

The results which we have just given enable us to account for what takes place in the crystallization of silicious rocks in general, as well the eruptive as the metamorphic. Let us first examine the former of these, commencing with the lavas.

Whatever may be the molecular state of the water in lavas, it intervenes to cause them to crystallize much in the same way as in the experiments of the laboratory for transforming obsidian into crystallized feldspar, and for producing pyroxene in perfect crystals. Thus, in

one as in the other case, the water appears to favor the *elimination* of substances which would remain mixed, and to permit the crystallization of silicates at a temperature very much lower than their point of fusion.* It is again through the influence of this kind of mother water that the same silicates crystallize in a succession which is often opposed to their relative order of fusibility. We know, for instance, that amphigene, a silicate of alumina and potash, which is infusible, has been developed in the lavas of Italy in crystals which are often very large, and in which are imbedded numerous crystals of pyroxene, a substance of known fusibility. These apparent anomalies are shown in a still more striking manner in granite, which differs from all the products of dry fusion with which we are acquainted, and different conjectures have been offered to explain them. It can be explained nearly in the same manner; only in the formation of granite the action of water, according to the observations of Elie de Beaumont, appears to have been aided still more than in the lavas by some auxiliaries, such as the chlorides and the fluorides. In the feldspathic porphyries containing quartz, water alone would have sufficed to produce the bipyramidal crystals which characterize this rock. This is again another capital phenomenon which has nothing analogous in the products of the dry way.

The remarkable association of anhydrous and hydrous silicates which basalt, phonolite, and other rocks present, is not surprising after the experiments that I have just described. For during the same operation, and in the same tube, I have obtained crystals of pyroxene disseminated in the midst of a zeolite; that is to say, the two constitutive elements of basalt simultaneously. A still greater difficulty presented itself when, on the one hand, the soft state or even fluidity of some eruptive rocks was considered; and on the other, their low primitive heat, which is well established by different circumstances. This difficulty is also done away when we consider what has taken place in these same experiments. The glass tubes which were perfectly regular were found, after the operation, bent, deformed, and covered with ampullæ in such a manner as to prove that they had undergone an unmistakable softening. Furthermore, sometimes the tube had almost disappeared; it was transformed into a kind of mud, presenting probably great analogies, as well in consistence as in composition, with the original state of some eruptive rocks. A very remarkable phenomenon, to which I shall have occasion to revert, is here produced; although the glass in the transformation loses a part of its elements, it augments considerably in volume; this augmentation is more than a third of the primitive volume. When we see the important part which water plays in the phenomena just passed in review, should we not also be led, with still greater reason, to attribute to it the most important part in metamorphic action, especially

* I will here recall the opinion of Dolomieu on the crystallization of lavas: "I repeat, perhaps for the hundredth time, the compact lavas are not vitrifications, and their fluidity at their exit from volcanoes, which continues a much longer time than their cooling should permit, is the very singular effect of a cause which is not yet determined."—(*Journal des Mines*, No. 37, p. 402, 1797.)

if we consider the great extent and the remarkable uniformity of its action?

Before examining this latter agency of water, it seems natural to examine to what extent its presence is possible in rocks. Let us first say that it follows, from the experiments already cited, that a very small quantity of water only is necessary to produce, under favorable conditions of pressure and temperature, very marked changes. We cannot, in effect, see without astonishment that such a complete transformation in the chemical and physical state of glass can be obtained by a quantity of water equal to about a third of its weight. This shows us how the water of constitution of some rocks, as the clays for instance, was sufficient to produce metamorphism when heat gave it the power to react upon the elements with which it was associated.

With regard to those rocks which do not contain any water of constitution, let us first make the remark that many of them are destitute of the water called *quarry-water*. We cannot suppose that this water has been lodged otherwise than in the pores of the rock. All rocks are, therefore, porous; and what takes place in the artificial coloration of agates proves that stones which are in appearance perfectly compact are by virtue of the sole force of capillarity penetrated by a liquid.

We cannot deny that if water can insinuate itself, by crevasses, into the solid crust of the globe at a depth only equal to that of the sea, it acquires a pressure of several hundred atmospheres, by the aid of which it penetrates more easily, perhaps, into the most minute pores of the rocks, especially at the temperature which it possesses at such a depth. This action is, without doubt, aided by capillarity within limits of which we can form no idea. It, however, the rocks were altogether impermeable, provided the water be endowed with the power of attacking their surface, time only is necessary in order that its action should be gradually propagated to considerable distances. Indeed, in the tubes prematurely withdrawn I was able to see that the attack had taken place by successive layers, in such a way that there yet existed between the two surfaces of the glass a portion that was transparent and altogether unaltered. Thus, whether the water of rocks is that of constitution or penetration, we are justified in expecting, as soon as the temperature is sufficiently raised, reactions comparable to those produced in our experiments, as well as in eruptive rocks. This, however, will be verified by an example as conclusive as surprising, which abounds in new facts, and has the double merit of being contemporaneous, and of having been performed under conditions which are now perfectly well known.

CHAPTER VI.

CONTEMPORANEOUS METAMORPHISM OF PLOMBIÈRES.

The concrete which the Romans put down nearly to the points of emergence of the thermal springs is composed of fragments of brick

and of party-colored grit, without admixture of sand, and cemented by lime. It rests sometimes on the granite itself, sometimes on alluvial gravel. Under the prolonged action of the mineral water, which continually penetrates this mass of concrete, I have found that the calcareous cement and the bricks have been partially transformed.* The new combinations appear chiefly in the cavities of the mass, where they form mamliated and sometimes crystallized coatings. The products, the most remarkable on account of their abundance, are the silicates of the family of the zeolites, and especially apophyllite, chabasite, and harmotome. Besides the presence of the zeolites, which have crystallized in the cavities, the pieces of brick which form a part of the Roman concrete have often acquired a very peculiar aspect; they have been thoroughly impregnated with silicates, resembling those which have crystallized in geodes; they have undergone a genuine metamorphism. I have been able to determine accurately all the conditions under which this metamorphism has taken place.

Notwithstanding its extreme hardness, the Roman masonry gives access to the thermal water as well by its pores as by the fissures and cavities that exist in it. The pressure from the springs, moreover, forces the water to circulate slowly through the mass, which is thus not only bathed but *traversed* by the mineral water. The water, therefore, is not stagnant; there is a *current*, very slow it is true, but this current is continuous. On the other hand, the mineral water of Plombières contains only a very small quantity of saline matter, (4.6 grains to 60 cubic inches of water,) which is composed in part of silica, potash, soda, lime, and alumina; but continual renewing and indefinitely prolonged action permit deposits of these substances to accumulate in notable quantities. It is in this way that very feeble agencies are multiplied by the aid of time. Up to the present moment this condition of time is wanting in the greater part of the experiments attempted for the purpose of imitating nature; but its capital influence over certain geological phenomena will be easily appreciated.

By means of the alkali which this water contains it gradually acts upon some of the substances which it traverses, and perhaps even without there having been a real solution, but only a kind of cementation. It then causes the formation of double hydrous silicates, which belong to the group of the zeolites. It is to the union of these two circumstances, circulation of the water and its chemical agency, that these modern formations are due. In order that the silicates which are formed should crystallize perfectly, there is really no necessity for so high a degree of heat as has been supposed; a temperature of from 60° to 70° centigrade, which is that of the mineral springs of Plombières, is sufficient for the production of at least some of them. Zeolites have consequently often been formed in this rock under simple atmospheric pressure, and even on the surface of the soil. It is remarkable to see these silicates crystallizing perfectly, in water, at a

* *Annales des Mines*, 5th series, vol. xiii, p. 227, 1858; *Bulletin de la Société Géologique de France*, 2d series, vol. xvi, p. 562.

temperature at which they are reputed to be insoluble in it. At points as near each other as a few sixteenths of an inch we see different products forming, according to the nature of the substance on which the water acts. Thus it is that apophyllite, a silicate containing lime as well as potash, crystallizes in the cavities of the lime. I have never met with it in the brick. It is, on the contrary, almost exclusively in the cavities of this last that we find chabasite, a double silicate of alumina and potash. The same solution, therefore, attacking rocks of different natures, develops combinations special to each of them. Such a marked localization of certain zeolites appears to show that their elements were not entirely contained in the water imbibed by the masonry; it only contributed a part. The complementary elements necessary to the composition of the new minerals, lime, alumina, and others, were contained either in the mortar or in the bricks which gave them up to the water.

While the bed of concrete abounds in zeolites, the alluvial sand over which the masonry was built presents no indication of the formation of these silicates, although the thermal water traverses it before reaching the concrete. It confines itself to depositing between the interstices of the pebbles a yellowish argillaceous mass, which is one of those imperfectly defined substances known under the name of chemical clays or halloysites. This contrast shows further that the zeolites are not the first deposit of the thermal water, but that it is produced only by the reaction of this mineralized water on other silicates.

What is going on at Plombières has been evidently accomplished on a wide scale in certain geological formations. The collection of minerals disseminated in the innumerable cellules of the masonry, the zeolites, opal, and arragonite, constitutes an association which is frequently the appendage of certain eruptive rocks. Furthermore, the whole of the conditions under which these contemporaneous minerals exist recall, in the most minute particulars, their disposition in the layers of basalt and trap, which have an amygdaloidal structure. If it were not for the difference of color it would be quite possible to mistake the parts of this concrete which contain the zeolites for the basaltic traps in which the same minerals have been formed. The bricks, with their cavities and druses, surprisingly imitate amygdaloidal rocks. Such an identity of results incontestably indicates striking analogies of origin. Near the volcanic rocks of *Ætna*, of Iceland, and other countries, we find a rock to which the name *palagonite** has been given. This hydrous silicate is easily fusible, gives a jelly with acids, has often a resinous aspect, presents the strongest analogy with the silicates of Plombières, and, according to all probability, results from a transformation similar to that which gave rise to these last. But it is especially with regard to metamorphism that we should here state the results of the action of the springs at Plombières.

* Rammelsberg, *Chemische Mineralogie*, 3d and 5th supplement, pp. 93 and 185; *Annales des Mines*, 5th series, vol. xii, p. 474.

CHAPTER VII.

CONCLUSIONS TO BE DRAWN FROM THE FACTS OBSERVED AT PLOMBIERES.

It has been justly remarked that there are but few insoluble substances when the solvents circulate by millions of gallons. Yet we must not conclude from this that the insoluble minerals formed by water in the interior of rocks have been purely and simply deposited by it after the action of centuries. One of the newest and most important facts which reveals what is going on at Plombieres is, that in general only a small part of the elements constituting these minerals is furnished by water. The other elements pre-existed in the rocks, and appearing to obey an energetic tendency to crystallization they seize, as it were, upon what first passes, according to their affinities, and the mineral is, so to speak, formed in situ.

In metalliferous veins, on the contrary, almost everything that is deposited in the channel of circulation of the spring appears to be foreign to the rock forming its sides. These are the very different effects of the same cause, and their union in the same place, at Plombieres, leaves no doubt of their common origin.

There is a striking analogy between the formation of the crystallized silicates of the concrete of Plombieres and the formation of the silicates which are found in a great many metamorphic rocks; such are wernerite, garnet, feldspar, and pyroxene in limestones, often hardly modified at all; and macle or staurotide in argillaceous schists. The production of mica in rocks is not more difficult to understand than that of apophyllite at Plombieres, which is also a silicate containing fluor.

When a dislocation produces a group of hot springs is it not probable that the greater part of the formations traversed by these springs will undergo an action of which an idea is given by what has happened at Plombieres? This action, gradually extending with the aid of time, would occasion metamorphism over zones of very great extent. At Plombieres, before the hollowing out of the valley gave issue to the springs, the thermal water already arrived from the interior of the earth,* and if it appeared on the surface it was, without doubt, only by a scarcely apparent transudation. In diffusing itself through the beds of the lower triassic formation, which are in contact with the granite, it deposited there jasper, crystallized quartz, and several other products. Thus water circulating in the interior may cause a very energetic metamorphic action without evidence of its existence being shown on the surface by thermal springs. It is probable that in many cases the silicification of polyps and wood in certain beds, the precipitation of crystallized quartz in others, such as those that are found in the tertiary basin of Paris, the complete silicification of some beds that were formerly limestone† have no

* See the memoir on Plombières, referred to above.—(*Annales des Mines*, 5th series, vol. xiii, p. 232; *Bulletin de la Société Géologique de France*, 2d series, vol. xvi, p. 562.)

† *Description Géologique du Bas Rhin*, pp. 325 and 326.

other origin. A tepid and scarcely mineralized water has been sufficient to transform this masonry and produce in it hydrated and crystallized silicates. Would not the effect have been much more considerable if water greatly superheated, and yet retained by the pressure of the masses above, had slowly circulated across certain rocks, as it has done in the concrete of Plombières, and had acted on them at the high temperatures which are necessary to the formation of anhydrous silicates?

CHAPTER VIII.

OTHER PECULIARITIES OF METAMORPHISM EXPLAINED BY THE AID OF THE FACTS MENTIONED IN CHAPTERS IV AND VI.

In comparing the results obtained by the experiments on superheated water, with the facts gleaned from the contemporaneous phenomena of Plombières, we can explain the greater part of the phenomena of metamorphism. I shall add only a few examples to those of which I have spoken above. One is the well-known development of pyroxene and amphibole in the secondary limestones of the Hebrides and the Pyrenees. I will mention also the production of such various minerals in the blocks of limestone of Mount Somma, the geodes of which are incrustated with diopside, mica, and other substances. A frequent phenomenon of metamorphic rocks is the development of feldspar in their mass. Among the numerous facts of this kind, I will recall the schistose formations which border upon granite, (Britanny, Saxony, &c.,) and even the schistose masses near which we do not see any eruptive rock, (Taunus, Ardennes, &c.) In the carboniferous formations of the Vosges, at Thann, for instance, the perfectly regular beds of greywacke are studded with crystals of feldspar, which have isolated themselves from a petrosilicious base; the numerous vegetable fossils which the rocks contain will not allow of its being considered as a porphyry. The limestone of Mont Blanc, formerly noticed by Brochant, and which Brongniart named *calciophyre feldspathique*, has peculiar analogies. We should not, however, lose sight of the fact that here, as in other cases of the same kind, the limestone which has thus been modified has not always changed its primitively compact for a crystalline state.

Among the frequent associations of anhydrous and hydrous silicates, I shall restrain myself to mentioning the chloritic rocks which form the gangue of tourmaline, amphibole, pyroxene, &c. The crystals of the feldspar called adularia, which are penetrated with chlorite, (Pfitschen, in Tyrol,) sometimes even with stilbite, (Sella, or St. Gothard,) show us that the anhydrous were even sometimes crystallized after the hydrous silicates.*

* Although chlorite has not yet been imitated, we may believe, from its chemical analogies to the zeolites, as well as from the preference it shows for those formations which have undergone a commencement of modification, as the schistose formations of the Ardennes, that it has been formed at a high temperature.

In the silicious rocks quartz has been isolated in a great variety of forms. The granitic rocks and some porphyries contain it in grains or in isolated crystals. In the schistose rocks it is sometimes under the form of veins or thin flakes, lodged between the lamellæ, with an uniformity of thickness and parallelism that is surprising, as in mica, chlorite, and talcose schist, leptinites, phyllades, &c., sometimes under the form of veins which distinctly cut the lamellæ at the same time that it attaches itself to them. Sometimes, even, quartz in a granular state constitutes considerable masses, as in the rocks (itacolumites) of Brazil, which are associated with gold and diamonds. In the greater number of cases, however, quartz appears to be the product of a decomposition of silicates, just as in my own experiments, where it was produced in different ways. Thus quartz, which under so many forms constitutes a part of eruptive and metamorphic rocks, should be considered equally with that of veins as a witness for the wet way.*

We may conclude from what happens in the experiments on superheated water, as from the example of limestones so charged with minerals, which are thrown out from the interior of Mount Somma, that heat and pressure appear to be indispensable to the production of an energetic metamorphism. On the other hand, an intense metamorphism has been sometimes developed near the surface, as in Brazil, where the crystalline schists containing gems extend more than 200 miles in length. There seems to be a contradiction between these two facts, and yet, when the superheated water is impelled from great depths toward the surface through the substance or the scarcely opened fissures of a rock, it must be remarked that the laws of hydrostatic pressure are not applicable to it, as it would be to water ascending freely in a crevasse. We can easily understand that in the first case its pressure, and consequently its temperature, might be preserved, as it were, in a close vessel, up to only a few feet from the surface. It is therefore possible that many phenomena, such as the crystallization of granite and of certain masses of tin, which contain the same minerals as the rocks of Brazil, may have taken place under pressure, although at no great depth.

It is possible that some minerals, the anhydrous silicates, for instance, are not easily produced in water except at determinate temperatures. Too much heat, as well as a want of heat, is prejudicial to their formation. Moreover, experiment seems to show that the feldspars are sometimes produced and sometimes destroyed in water, according to the temperature. It is probable, that because in some parts of the Alps, such as the Grisons, the higher portions alone furnished a proper temperature, that metamorphism and the various minerals which are, as it were, witnesses, have been produced there rather than in the beds situated lower down, whose section we can follow in the

* My experiments thus fully confirm the views which Schafhäüt and Bischof have published on this subject.

immense chasms.* This fact would be analogous to the condensation, in the superficial beds of volcanic mountains and of lavas, of sal ammoniac, the different chlorides, sulphur and specular iron, or to the well-known enrichment of numerous metallic veins in their upper part.

To sum up, when we are to explain the origin and the formation of silicates in most of the rocks, it is not to the dry but really to the hydrothermal way that we must oftenest have recourse. This assertion is founded on the following considerations:

1. Formation by the wet way takes place at temperatures incomparably lower than the point of fusion; this is a condition of which we have previously recognized the necessity.

2. The hydrated silicates which we find in nature often associated with anhydrous silicates are easily formed in the wet way, as we have seen, at the same time as these last (zeolites with pyroxene, chloritic schist with tourmaline and feldspar, &c.); their formation is with difficulty explained in the dry way.

3. Quartz is extremely abundant in nature. Now, as soon as superheated water is in contact with a great number of silicates, soluble or insoluble, we see that a part of the silica isolates itself and becomes a genuine crystalline quartz, which does not at all resemble the glass produced by the fusion of quartz.

It will be remembered in effect that silica, whether melted or obtained by the decomposition of the silicates, has none of the properties of quartz; that it is not as dense, nor as refractive, nor as hard, nor as refractory with alkaline agents.† It is possible that this difference of properties is the cause of the easy decomposition of the vitreous silicates: the menstruum attacking the silica under its soluble modification, then, perhaps, without there being any necessity for a change of circumstances, they precipitate it under the modification corresponding to insoluble quartz, only serving then, so to speak, to cause the silica to pass by a kind of continuous evolution from one molecular state to the opposite‡.

4. In fine, instead of uniform masses, such as fusion generally produces, we see in the products of the wet way mixtures of different crystallized substances, whose mode of association is entirely independent, as is the case with the greater part of rocks of their relative degrees of fusibility.

* This fact, which results from former and unedited observations of Elie de Beaumont, has been recently pointed out also by Sir Roderick Murchison.

† Pogg. Annalen, 1859.

‡ Stannic acid presents something similar, when we see one of its modifications, (stannic acid, properly so called) passing by the simple action of heat to the other state of modification, (metastannic acid,) and thus separating itself from certain solvents.

CHAPTER IX.

APPLICATION OF THE SAME FACTS TO ERUPTIVE ROCKS.

Eruptive rocks present a great analogy of composition with metamorphic rocks; many minerals are, in fact, common to the one and the other. It is thus that the elements of granite (feldspar, mica, and quartz) are often found in the beds that it has traversed, and where they are, as it were, extravasated.* When granite or syenite have enclosed fragments of pre-existing rocks, they have even been in some sort assimilated, as I have elsewhere shown.† We find a very remarkable example of this in the masses of compact limestone of Mount Somma, in the interior of which, amphigene, sodalite, and anorthite, have crystallized, as well as in the lavas which are adjacent to them. The limestone of Kaiserstuhl, with its titaniferous oxydulated iron, its pyrochlore, its perowskite, its apatite, manifests also its relation with the doleritic rock, which has furnished the principal elements of these minerals. It is on this resemblance of composition, sometimes striking, that the conclusion that the minerals of metamorphic rocks have been produced in the dry way has often been based.

I will reverse the argument by saying that if components, such as feldspar, mica, quartz, amphigene, pyroxene, &c., are found in stratified rocks, under conditions where they could not have been formed but by the intervention of water, we ought to regard it as very probable that water has acted in the same way in the crystallization of the eruptive rocks themselves, a conclusion to which we have before been drawn by other considerations. If it were necessary to propose an hypothesis on this singular association of water with eruptive rocks endued with a high temperature, we should be apt to consider these hydrated masses as a very concentrated solution of the silicates, a kind of watery fusion rendered persistent by pressure.

When these silicates have crystallized, their mother-water, accompanied by various substances,‡ has disengaged itself from them, preserving, however, a temperature and a pressure sufficiently great to penetrate into the surrounding rocks and modify them extensively. From this fact result, perhaps, the analogies which have been mentioned above between the eruptive rock and the rock which has been traversed. Thus to recapitulate and follow out the part that we are led to assign to water in eruptive rocks, I will say that we can distinguish three principal agencies, which it exercises under three conditions: 1. Arriving in a state of combination with these rocks, of which, with the concurrence of heat, it causes the softening; 2. Disengaging itself from the rocks as they consolidate, traversing and metamorphosing the neighboring rocks; 3. Escaping sometimes to

* According to the numerous observations of Elie de Beaumont, de la Bèche, Gruner, Naumann, and many others.

† *Annales des Mines*, 5th series, vol. xii, p. 319.

‡ Like the chlorides of the lavas.

the surface, either in a state of vapor or as hot springs.* Let us remark, however, that this *extravasement* of minerals ready formed, of which I spoke above, is, without doubt, only an appearance, and that the feldspar or the mica which is in the neighborhood of granite was probably formed in situ by borrowing, as at Plombières, a part of its elements from the medium in which it was developed.

It is here that we may advert, in a few words, to the singular destiny of pyroxene. The crystals of pyroxene, so frequently disseminated in lavas, were formerly considered as having been detached from a pre-existing rock, and, to better express the idea already put forth by Dolomieu, that they were not formed in the volcanic rocks which contain them, but that they had been simply imbedded in them. Haüy gave its name to pyroxene, in the sense which its derivation indicates—*stranger to fire*.† Afterwards it was ascertained that, on the contrary, it had crystallized in the lavas, especially since the experiments of Berthier and Mitscherlich, and it has been considered as the type and exclusive product of the dry way. Is it not strange to see that, by its great tendency to form in superheated water, it is this mineral which appears at the present time the most important among the best characterized products of this new method? Let us add, further, that water might have had its influence even in the mechanical action of the eruptive rocks. Indeed, in the recital of my experiments I have designedly dwelt on the augmentation of volume which glass transformed into a zeolite by the agency of water has undergone, in order to draw from it the conclusion that, in all probability, at the moment of their hydration certain rocks have undergone a phenomenon of increase analogous to that of which we have numerous natural examples when anhydrite changes into gypsum. This increase was probably sufficient in many cases to bring about the extrusion and the eruption of rocks; this would be particularly the case with phonolites and basalts.

CHAPTER XI.

METAMORPHISM OF STRUCTURE; ITS RELATIONS TO ORDINARY METAMORPHISM.

We have seen, in the first and second part of this memoir, that the schistose structure appears to be the result of pressure and of slips undergone by the strata under the action of energetic forces. The experiments on this subject, which I undertook before knowing of those of Mr. Tyndall, but which I made by other processes and on a larger scale, confirm this theory. I used for the purpose powerful

* To this are to be referred the springs of which metalliferous veins and other deposits neighboring on eruptive rocks attest the existence. They have probably, with time, diminished in temperature and volume, and have at last dried up, when the masses from which they came arrived at their last stage of consolidation and refrigeration.

† "The name pyroxene apprises us that the crystals of lavas are not in their native place."—(*Mineralogie de Haüy*, 1st edition, vol. iii, p. 90.)

means of compression, not only rolling-mills, but also the lever presses moved by steam, which are used to stamp sheet iron into various utensils. All these methods of compression, whether gradual or by shocks, were successively employed. The matter upon which I principally operated was clay brought to a peculiar state of desiccation.* The clay submitted to these different processes of compression acquires a very marked schistose structure;† but for that, besides pressure, two other conditions are indispensable.

1st. It is necessary that the substance be capable of sliding and extending itself by an inchoate lamination; then the lamellæ develop themselves parallel to the sides—that is to say, normally as regards the pressure. No result is obtained if the body cannot yield and change its form in the direction perpendicular to the pressure. A piece of clay, cylindrical in form, placed in a cylinder of cast iron of the same form and dimension, was powerfully compressed by a piston of the same calibre. The substance acquired very great consistency, but showed no indication of lamellæ, not even of cleavage. This, I repeat, takes place only when the mass of earth fits exactly in its rigid envelope; otherwise deformation takes place, and consequently the formation of lamellæ.

2d. The substance to be compressed ought to possess a high degree of plasticity. Too dry, it breaks; too soft, it becomes laminated without any lamellar structure being perfected. Specimens of the same clay in different states of dryness, submitted simultaneously to compression, furnish superposed layers, some of a schistose structure, others of an irregular fracture, whose contrast is very significative. I have tried also to produce by the same process the schistose structure of the silicates at the moment when they pass from a state of fusion to a solid state. The slags of iron blast furnaces which I submitted to pressure while they were still in a state of paste did not become schistose. The fracture of the cooled mass only showed different colored veins in lines normal to the pressure. What I have said above, concerning the influence of plasticity in the formation of the lamellæ, explains the frequent transitions which we see in the same mass of partially schistose rocks. It is thus that, to cite an example, the porphyry of Mairus in the Ardennes, becomes gradually schistose.

It is proper here to call to mind that glass acquires a very remarkable schistose structure from causes entirely different from those which we have just mentioned. At the same time that the glass tube transformed by superheated water swells considerably it takes this schistose structure in a very marked manner. The lamellæ into which it easily cleaves, are so thin that sometimes more than ten can be distinguished in a thickness of the sixteenth of an inch.‡ When

* These experiments took place at the factory of Karcher and Westermann, at Ars-sur-Moselle. I used especially the refractory clay of Villy-en-Trode, (Aube,) which comes from the neocomian formation and from the grey supraliasic marls.

† Certain tiles obtained by a peculiar process of moulding which is employed at Epinal, also often present a commencement of the foliated structure.

‡ Sometimes they can be as neatly detached the one from the other as the leaves of a quire of paper.

the glass is incompletely acted upon, the centre, although still vitreous, also shows very fine zones, like onyx, the whole reminding us of the characteristics of certain schistose and crystalline rocks. The schistose structure which the glass tubes acquire is evidently the effect of their mode of fabrication, which has given to the mass a structure by superposed layers. It is a species of heterogeneity which can be made evident by the subtle action of polarized light, but which, to the naked eye, is at first concealed by an apparent homogeneity. It appears when water, by an unequal action, has marked out the zones of different natures, and still better when the substance already modified in part has undergone contraction. These lamellæ are, in effect, more apparent in some tubes than in others. A manifest proof of a fact of which we find different examples in manufacturing,* and which shows how the primitive disposition of the constituent materials of a rock, although they may have disappeared by ulterior action, may still be present in a latent state, and reveal themselves when new influences bring them to light.†

A phenomenon which almost always accompanies a schistose structure in crystalline rocks, is the remarkable parallelism which a part of these crystalline elements presents.‡ Those which have the form of spangles, whatever may be their nature—mica, chlorite, talc, graphite, or specular iron—are arranged flatwise, according to the planes of their lamellæ; sometimes they even present a sort of alignment, which has been called *linear parallelism*, as if there had been a drawing out. The chlorite, micaceous, and talcose schists offer the best characterized examples of this phenomenon.

It is even to these spangles, which were supposed to assume an arrangement in parallel planes under the influence of calorific or magnetic action, that, in accordance with the views of Sir John Herschel,§ the cause of the lamellar structure has often been attributed. Sorby has sought to confirm this influence of spangles by an experiment which consists in laminating a mass of paste containing them. I cannot accede to this view, and I think that the alignment of the spangles, instead of being the cause, is, on the contrary, only the consequence of the pre-existence of these lamellæ. I found my opinion on four principal reasons: 1st. A lamellar structure is sometimes developed in nature, and I have seen it perfectly produced, in the experiment previously cited, in the absence of all kinds of spangles. 2d. Crystals which are far from having the lamellar form, as

* We know, for instance, that in shaping pieces of porcelain clay, the person who does the rough work at the lathe and the moulder must take great care to produce an *equal* pressure on all the parts of the piece which they are executing. Very small inequalities of pressure, at first completely imperceptible, become evident after baking by numbers of irregularities, some of which are known under the name of *screwing*, (*vissage*.)—(Brongniart, *Arts céramiques*, vol. i, p. 123.)

The fabrication of Chinese image mirrors appears to be founded on a principle of the same kind.

† The experiments which I have recently made bring out the schistose structure in a metal which would seem as little disposed to acquire it as brass.

‡ All the schistose minerals and rocks do not show this alignment; thus the macles are not in general disposed parallel to the layers of the phyllades, of which they form a part.

§ *Manual of Geology*, Lyell, 1857, vol. ii, p. 447.

garnet and magnetic iron, present, notwithstanding, a very regular alignment. 3d. I have observed, in experiments similar to those of Sorby, that the spangles really have a tendency to arrange themselves gradually in the direction of the movement determined by the pressure, in such a way that the friction resulting from the sliding will be the least possible. Nevertheless, their alignment is very imperfect in comparison with that of nature, often so remarkable in its regularity, and that of these spangles, those which are not able to arrange themselves in the general plane, appear to disturb the formation of the lamellæ. 4th. A process has given me results which are almost identical with those of nature; it consists in impregnating clay, before submitting it to lamination, with water heated to 100° centigrade, and saturated with boracic acid; then laminating it on a plate of cast iron heated by a furnace, so as to avoid the precipitation of the acid before the formation of lamellæ. But in this experiment the spangles of boracic acid, which are produced between the lamellæ by an ulterior cooling of the liquid, present an alignment infinitely more regular than in the experiment of Sorby, and altogether like that of certain micaceous schists.*

By comparing the facts which we have just cited with the data which the metamorphism at Plombières has furnished us, we arrive at a conclusion of the highest probability. If the materials, concrete or bricks, into which the water of Plombières penetrates had a lamellar structure, is it not evident that the mode of circulation of the water would have been influenced, and that the liquid veins insinuating themselves in preference between the layers would have given rise on their passage to crystals in lamellæ or otherwise sensibly aligned? In the case where the metamorphism would not have taken place but by a water of constitution, we yet comprehend that the crystals would be developed profiting by the planes of cleavage in the mass. The papyraceous arrangement, so remarkable in its regularity, which the quartz of some leptynites and porphyries presents, may have had an analogous origin, since, as we have seen, water intervenes also in the crystallization of eruptive rocks.

CHAPTER XII.

COMPARISON OF ALL THE PHENOMENA WHOSE SEAT IS IN THE INTERIOR OF THE EARTH.

If thermal springs are the agents of metamorphism, we need not be surprised that the same mode of metamorphism extends over extended regions, since we still see mineral waters grouped together in families of analogous composition in regions of great extent; thus they are generally carbonated in Auvergne and Eifel, sulphurous in

* I do not, however, pretend to say that this lamination in some cases has not continued after the alignment of the spangles in the rocks; it is easy to be convinced of the contrary by examining the different schistose crystalline rocks.

the Pyrenees,* &c. We meet with these analogies still more strongly characterized in the metalliferous deposits, which appear to be also a product of like origin, and although the greater part of them contain numerous mineral species often distributed in a very unequal manner in different parts of the same vein, the nature of the gangues, as well as that of the metals, which can be mined with profit, show they are generally grouped in systems. These systems sometimes embrace entire regions, especially on the continents whose geological structure is not parcelled out like that of Western Europe; as, for instance, the argentiferous groups of Mexico, the great auriferous bands of the Alleghanies and Brazil, the stanniferous zone of Malaya.

The same fact is well known of volcanoes. If there are any that are isolated, the greater part constitute a *series*, as de Buch long ago demonstrated, when he compared them to vents which had been formed on a line of the same great fault. As to earthquakes, we shall only mention them to associate them with volcanoes, to which they seem so intimately related.

The families of thermal springs, of metalliferous veins, of volcanoes with their earthquakes, occupy extents quite comparable to those which we have established for regional metamorphism, the seat of which occupies entire countries. As with all these families, the metamorphic formations† are exclusively confined to regions where dislocations have taken place.

On the one hand, in effect, the oldest stratified formations of Russia and Southern Sweden, as well as those of North America, which have preserved their primitive horizontal position, are not sensibly transformed. On the other hand, the recent formations, but whose stratification is very much disturbed, such as the jurassic and cretaceous beds of the Alps, the Apennine mountains, and Tuscany, have, on the contrary, been entirely modified, even where there are only a few eruptive masses. The phyllades are but the first term of much deeper transformations; so they are never found outside of zones which have been more or less dislocated.

It is, then, difficult not to see, in these different kinds of phenomena of which I have just spoken, the manifestations of one and the same agent, whose seat extends beneath entire countries. This essential agent is water, aided by heat of different intensities, with which are joined, as secondary causes, the emanations which accompany it. For volcanoes the thing is evident; for metalliferous veins there can hardly be any doubt, especially after the labors of Elie de Beaumont and the experiments of de Senarmont; and with regard to metamorphism we think that our assertion has become extremely probable. Thus we think that water acts without cessation in the lower regions of the earth, after having there acquired a temperature

* Longschamp remarked that in the entire length of this chain, which is more than sixty miles, there are more than one hundred and fifty springs, all of the same kind, and only differing within very narrow limits by the proportion of their elements.—(*Memoir read at the Acad.-my of Sciences, August 12, 1833.*)

† At the least, those that are posterior to the silurian formation.

more or less elevated by means of the heat of the globe. Its action is at some points *patent*, demonstrated as it is by volcanoes, earthquakes, solfionis, and hot springs which issue on the surface; at other points it is *latent*, where the thermal springs, possessed of an ascensional motion, are lost by reason of the thickness of the beds, or when the water of constitution only of the rocks reacts upon them and produces metamorphism. Such is the idea which has dictated the title inscribed at the head of this memoir.

APPENDIX.

CONSIDERATIONS ON THE FORMATION OF THE SCHISTOSE ROCKS WHICH PRECEDED THE SILURIAN PERIOD.

Below the silurian formation we only know at present of rocks which are eminently crystalline. In general the passage from the one to the other is gradual, but sometimes the line of demarcation is quite evident, as in Sweden, Finland, and the United States. Thus the oldest beds (Potsdam sandstone) which this last region of the globe presents have undergone no modification, and rest horizontally upon the azoic formations with vertical lamellæ.*

The effects of metamorphic action show themselves, as we have seen, in the formations of different ages. It is the oldest beds, however, which have the most completely undergone this action. The cause which produced it appears, therefore, to have been enfeebled by time, and to have probably possessed, before the silurian formation, a considerable energy, that is to say, that it evinced itself nearer the surface. Thus we comprehend why very many geologists thought that they saw in these antesilurian deposits the first sedimentary beds, but that they had undergone a metamorphism. This supposition is supported by the great resemblance between the primitive and stratified rocks, whose metamorphic origin is not doubted. As in these last, so in the midst of gneiss, which constitutes the greater part of the formations of which we are speaking, we find limestones, dolomites, amphibolic schists, quartzites, petrosilicious rocks, (halle-flinta of the Swedes,) and masses of metallic ores, which often cannot be distinguished from those found in the upper beds. This resemblance is so striking in the limestones, on account of the minerals which they contain, and their mode of association, that we might, for instance, easily confound the crystalline limestones containing spinel and chondrodite, which are subordinated to the gneiss of Pargas, in Finland, or Canada, with those of Monzoni, in Tyrol, and of Mount Somma, which belong to formations comparatively recent.

As still another analogous fact, we should mention graphite, or the

* Foster & Whitney's sketch of the silurian formation of Lake Superior.—(*Bulletin de la Société Géologique de France*, 2d series, vol. viii, p. 89.)

carbonaceous combinations which we meet with in the more ancient formations,* (graphite of St. Marie-aux-Mines, anthracite of Konigsberg, in Norway, or of Dannemora, where it is in a gray limestone hardly crystalline, bitumen of the veins of granite of Finbo, near Fahlun, and the numerous iron formations of Sweden.)

Other geologists, on the contrary, struck with the intimate connexion which exists between the granite and this gneiss, have considered the latter as a granite which has become schistose by having been flattened out. If this was so, it would be necessary to conclude that certain masses of limestone, quartzite, magnetic iron, and other metallic ores, pre-existed in the granite, and that they have been softened at the same time with it, so as to be susceptible of being extended simultaneously, and thus take the form of plates parallel to the foliations of gneiss, imitating stratification in a very striking manner. This is a supposition that can hardly be admitted.

There are still two important remarks to be made on this subject : 1st. The absence of transition in the azoic schistose rocks of the silurian formation shows that the first rocks had already acquired their crystalline state, before the deposit of the oldest known fossiliferous rocks. This fact is confirmed by the pebbles of well characterized gneiss, which the formations of transition sometimes contain. 2d. There is no indication that these same ancient rocks have in certain countries ever been covered by any considerable thickness of other rocks, otherwise we should have to admit, and we have no ground for doing so, that extended and scarcely undulated countries like Scandinavia or Canada, have undergone enormous denudations. Besides, formations like those of Scandinavia and North America, which we have just cited as examples, are found in all parts of the globe with analogous characters ; they form almost universally a kind of covering for granite.

Supposing that the mass of all our seas were diffused as vapor in the atmosphere, the pressure on the surface of the globe would amount to at least two hundred and fifty times what it now is ;† it would even be greater by reason of the intervention of gases and of other vapors. There could, then, not have existed liquid waters on the earth, until the temperature of its surface was reduced below that degree of heat which can give to the vapor of water a tension of two hundred and fifty atmospheres. The surface of the globe, then, was at that epoch at a very high temperature, and if there existed any silicates on the surface of the earth they must have been formed in the dry way. Afterwards, when water had commenced forming in the liquid state, it would have reacted on these previously existing silicates, and would have given rise to an entire series of new pro-

* So long as synthesis, which in the hands of Berthelot had led to much remarkable results, has not imitated the anthracites of Sweden without the aid of plants, we must believe that these combustibles are of vegetable origin, and consequently that the plants existed when the gneiss which these deposits contain was formed.

† Admitting, with Baron Humboldt, a mean depth of 1,900 fathoms for the ocean, we should have 1,400 fathoms as the depth of a bed of water uniformly spread over the globe, which corresponds to a pressure of 248, or in round numbers 250 atmospheres.

ducts. By a true metamorphic action the water of this primitive ocean first caused the structure proper to these melted masses to disappear by penetrating them, and afterwards formed, as in our tubes, crystallized minerals by means of the very principles which had caused it to dissolve them. These matters formed or suspended in the midst of the liquid, would be precipitated to its bottom with variable characters in the deposit, in proportion as the heat of the liquid diminished. Are these different periods of chemical decomposition and recomposition, in which the wet way intervenes under those extreme conditions which touch so nearly on the dry way, the era of the formation of granite and of the schistose rocks which are altogether azoic and crystallized? We cannot affirm it absolutely, but we must presume so, especially if we consider that on this hypothesis there have been formed two series of products, the one entirely massive, the other presenting traces of sedimentary origin, and which connect themselves one with the other in an insensible manner. This, in effect, is what exists in nature with regard to granite and gneiss.

In concluding I will remark, that if there has ever been a time when rocks were exclusively under the dominion of the dry way, they have passed under the regime of the wet way at an epoch much more remote than has until lately been supposed. We can hardly find now on the globe rocks to which we can assign with entire certainty a formation exclusively due to the dry way, without any concurrence of water. There is, however, an example which shows us what rocks of such a kind might be, and it is furnished us by the aerolites. These bodies in effect do not offer in their essential constitution either water or hydrated combinations. Is it not singular that, formed of silicates of the same bases as those of our globe, they have never presented either quartz, mica, or granite, but bodies which we do not meet with on the crust of the earth, such as metallic iron and metallic phosphurets and carburets? The existence of these bodies appears wholly to protest against the presence of water. Is not this a new motive, although a little far-fetched it is true, for believing in the impotence of heat alone to produce granite?

According to the hypothesis which we have just mentioned, the first deposits of the sea would have remained a long time in a soft state eminently favorable to the production of the schistose structure. The lamellæ of these rocks, as well as of those of the more recent metamorphic formations, have in general a position near the vertical, even outside of mountain chains in countries like Sweden, the Limousin, and Moravia, the outlines of which present nothing peculiar. From what we have said above on the production of a lamellar structure, the lateral pressures to which it appears to owe its origin must have acted almost horizontally. They were probably of the same nature as the compression which afterwards gave rise, in more solid stratified formations, to those different foldings and convolutions which characterize mountain chains. Thus, as the fibrous structure of iron shows the mechanical action that it has undergone, so these more ancient formations appear even then to have testified to the force of

contraction which afterwards produced mountain chains. This force was perhaps limited in these first epochs to producing the schistose character of the rocks. at the same time that, by reason of their flexibility, it augmented their thickness by folding, while scarcely undulating them.

Whatever may be the fate of hypotheses by which we allow ourselves to be carried away, even while recognizing that they rest as yet on grounds not sufficiently solid, we have a right to believe that the older gneiss demonstrates the high temperature of the globe in very ancient times. The universal production of crystalline rocks in these fundamental formations concurs with the whole assemblage of metamorphic phenomena to compel the admission of a general cooling of the interior of the globe. It is an argument of the most positive nature to oppose to the indiscriminate partisans of existing causes, who, with Hutton, envelop the origin of our planet in a night of indefinite duration, during which geological phenomena never ceased to revolve in the same circle.

Although these questions are still very obscure, we discover a grand simplicity of agencies which have given rise to a great diversity of effects; and the immediate productions of a superheated sea, the crystallization of eruptive rocks, the metamorphism of stratified beds, appear to be only different modes of action of the same phenomenon in different ages. Conclusions less vague, however, should be adjourned to the time, perhaps not far distant, when we shall succeed in producing granite artificially. Synthetical experiment has already, since the time of Hall, been exceedingly useful, and it is to it that the office of throwing still more decisive light on a formation where direct observation has doubtless little more to learn, appears to belong. If experimentation, armed with its most ingenious processes, has been necessary for understanding the phenomena which belong to our own day, and of which we are witnesses at all times, such as the weight of air, lightning, &c., with how much greater reason ought we to have recourse to it when the question relates to geological facts, the most important of which are not now repeated at least under our observation, and have left as the only witness a final result, preserving no trace of the intermediate activities which have produced it?

Up to the end of the last century geology was altogether hypothetical; it then entered upon a positive career based upon the observation of facts and induction. It is not long since a new era seems to have opened in which it seeks light from phenomena of every order—chemical, physical, and mechanical—by synthetic experimentation, thus undergoing the phases which physics have passed through since the time of Galileo, to arrive at the point which it has now attained.

REPORT ON NITRIFICATION.

PRESENTED TO THE SMITHSONIAN INSTITUTION IN 1858.

BY DR. B. F. CRAIG.

I have the honor to acknowledge the receipt of a communication from the Smithsonian Institution, requesting me to furnish information and suggestions upon the subject of the formation of nitre, with especial reference to its production in this country, and in accordance with this request I respectfully submit the following.

An opinion upon any one branch of the subject of nitrification cannot be fairly based upon anything but a statement of our knowledge of the whole, nor can the practical value of any source of nitre be estimated without a comparison of it with other known or attainable means of supply. In order, then, to be enabled to give the required information, I have felt myself called upon to take up the whole subject of nitrification, a subject of much difficulty and intricacy, the obstacles to the study of which are increased by the circumstance that information on it is only to be found scattered here and there through the pages of scientific publications. The difficulties attending it, together with the pressure upon me of other occupations, I would offer as an apology for my delay in answering your communication. To obtain clear ideas on those points on which information is most to be desired, it will be necessary to consider the subject under the following heads:

- 1st. Our knowledge of the laws which govern the formation of nitre.
- 2d. The manner and extent of its production in nature.*
- 3d. The methods that have been practiced for its artificial formation.
- 4th. The methods of artificial formation that have been suggested, or those which the present state of our knowledge would suggest.
- 5th. The experimental investigations that it would be desirable to make, for the proper advancement of the theory and practice of the manufacture of nitre.

I. Since nitrates† are continually being produced under different cir-

* Nitre is not found accumulated in masses like most minerals, but forms continuously in various places, whence it is extracted from time to time.

† The nitrates that are to be met with where nitrification has taken place, and which, for the sake of convenience, may be spoken of as a class, include saltpetre or the nitrate of potash, the nitrate of soda, the nitrate of lime, and the nitrate of magnesia. Their chemical formulas are as follows:

Nitrate of potash,	$\text{NO}_3 \text{ K.}$
Nitrate of soda,	$\text{NO}_3 \text{ Na.}$
Nitrate of lime,	$\text{NO}_3 \text{ Ca.}$
Nitrate of magnesia,	$\text{NO}_3 \text{ Mg.}$

The three last are convertible by simple means into nitrate of potash, the conversion requiring, of course, a supply of potash, which is usually obtained in the form of a ley of wood ashes.

The nitrate of soda is met with in South America. Those occurring elsewhere are, mainly, the nitrate of lime and the nitrate of potash.

cumstances, it is natural that something should have been known about the manner of their formation from a very early period in the history of modern science. We find, accordingly, that as far back as the 17th century it was held that the origin of nitre was due to the decomposition of organic matters, both animal and vegetable. That nitrates have, in large part at least, such an origin has long been well established, and it has been the opinion of many that, whenever nitrates are formed, organic matters must be looked to as their source. The way in which such matters come to be the source of nitrates has been partially elucidated by modern investigations.

Organic bodies as they are found in nature contain nitrogen in greater or less quantity, and in decomposing they give it off in the form of ammonia,* which is known to be convertible by the joint action of oxidizing agents and of mineral bases, such as lime, potash, &c., into nitrates of those bases. It is shown by different examples, and by general chemical analogy, that this conversion is greatly facilitated by the presence of solid substances in a finely divided or porous condition, and we may assume that nitrates are formed from the ammonia given off from decomposing matters by the action on it of atmospheric oxygen, and of porous bodies containing lime, potash, and other mineral bases.† Experiments directly to this point are, those of the French Academy, by which it was found that chalk, hung up in a basket over decomposing blood, was partly converted into nitrate of lime;‡ and those of Dumas, who formed nitrates by passing ammonia, mixed with moist air at a temperature of 212° Fah., over pieces of chalk moistened with a solution of potash.§ Kuhlmann, who has made very important contributions to our knowledge of the subject, converted the compounds of ammonia into nitrates by means of various oxidizing agents.||

This last-named chemist also performed the converse experiment of producing ammonia from nitrates by the action on them of nascent hydrogen and of such reducing or deoxidizing agents as furnish hydrogen. Upon these experiments, and upon other facts, he based conclusions of considerable importance to agricultural chemistry. He sets forth that when nitrates are mixed with an ordinary soil at that depth below the surface at which they are out of contact of air, they are reduced to ammonia by the agency of the organic matter present; and that conversely, when the ammonia in the soil rising to the surface comes into contact with the air, it is converted into nitrates of lime, potash, and whatever other bases may be contained in that particular earth. The reduction of the nitrate to ammonia in the deeper

* The chemical formula of ammonia is NH_3 . It is evolved in the gaseous form, in combination with certain volatile acids, also the products of organic decomposition, chiefly with carbonic and hydrosulphuric acids.

† Good examples of such bodies are found in ordinary earth; and a mode of producing nitrates, long practiced and well known, consists in mixing earth with organic matters, and allowing decomposition to go on with exposure to the air.

‡ *Memoires des Savans Divers*, vol. xi.

§ *Comtes Rendus*, December, 1846.

|| *Comtes Rendus*, November, 1846.

soil prepares it for the food of the plant, and the ammonia that might have escaped from the surface of the ground by reason of its volatility is prevented from doing so by its conversion into non-volatile nitrate.*

Nitrification, being much influenced by the temperature, goes on with the most rapidity in tropical countries, and this Kuhlmann considers as one cause of their greater fertility, since but little ammonia can escape unaltered through the surface stratum of the soil in those regions. It is evident that during dry weather nitrates must accumulate at the surface of the ground, and that upon the occurrence of rain they must, being very soluble, be washed down into the soil, and be there reconverted into ammonia.

Another set of circumstances under which nitrates are generated from ammonia-yielding substances are those brought forward by Dr. R. A. Smith in his researches on the air and water of towns. He shows that the drainage from sinks, cesspools, and other depots of organic matter, undergoes oxidation in passing through water-bearing strata, the oxygen dissolved in the water co-operating with the porous soil to convert the nitrogen of the decomposing matter into nitrates, and the sulphur into sulphates.†

In this way water purifies itself from the contaminations that are so largely poured into it so effectually that a well separated from a sink by a few feet of porous soil will be kept free from offensive matter, the conditions required being that the medium through which the filtration takes place shall not be a surface soil which is too much loaded with organic matter for oxidation to go on in it; and that there shall be sufficient supply of water containing oxygen in solution, which, of course, must be the case wherever springs or wells occur. When well-water becomes charged with organic impurities, it is because the drainage through the surface soil enters the well without passing through the deeper or water-bearing strata. Thus the production of nitrates takes place both at the very surface and deep in the ground, while there is in fertile soils a middle zone charged with organic matter, where their conversion into ammonia goes on.

Until the present century it was universally believed that organic matters were necessary in every case of the formation of nitrates, and up to the present time the opinions of a number of scientific men seem to be inclined to the conclusion that wherever nitrates are produced in large quantity they originate from the decomposition of such substances. In 1823, however, Longchamp read a paper to the French Academy, in which he advanced the doctrine that nitrates are generated from the nitrogen of the air, and not from that of organic substances. Since the time of Cavendish it has been known that the nitrogen and oxygen of the air may be converted into nitric acid. If the electric spark be passed through air confined over a solution of potash, nitrate of potash is generated; if over simple water, we have nitrate of ammonia. Again: when a mixture of nitrogen and hydro-

* *Exps. sur la Theorie des Engrais, C. R.*, November, 1846.

† *Proceedings of the British Association*, p. 66, 1851.

gen is burnt in the air, or in oxygen, nitric acid is produced in small quantity.

The possibility of the formation of nitrates from the nitrogen of the air being established, Longchamp argued that in many cases of the occurrence of these bodies the supply of organic matters was too small to account for the whole quantity.

Facts* that were known then, and some that have since been observed, seem strongly to sustain Longchamp's position, and have inclined many chemists to look upon his views as in the highest degree probable, and as explaining a large part of the production of nitre; at the same time, however, not questioning the facts of the first-mentioned mode of nitrification.

There is great difficulty in demonstrating that in any given case of nitrification the nitrogen cannot all come from ammonia, since ammonia and ammonia-yielding substances reach the nitrifying soil, or rock, in so many ways and from so many sources. They exist everywhere—on the surface of the earth, in all soils, and in many rocks; they are diffused through the air and are washed down from it by rains, and the water which percolates through the earth often carries large quantities of them with it, so that, although it can be pointed out that in certain cases the supply of them seems too small to account for the whole production, yet it would be very hard to reduce this to positive demonstration.

While it has been long known that the nitrogen of the air will, under certain circumstances, enter into the composition of a nitrate, it has not until very recently been clearly shown by experiment that this takes place under those particular circumstances under which nitrification goes on in nature.

In a paper read to the French Academy in November, 1855, M. Cloez details experiments made by passing air, carefully freed from organic matters and from ammonia, through porous substances of different kinds, (pounded bricks, broken earthenware, &c.,) impregnated with potash and lime. After a certain time nitrates were found to have been generated. These experiments attracted a good deal of attention, and they have been repeated and some additional observations made.

Though we have the fact of the production of nitrates from atmospheric nitrogen clearly shown, we have still to settle the question as to what is the *modus operandi* of the transformation—a point which is not so simple as it might seem at first sight to be. While there are several compounds of nitrogen and oxygen, none of them can be formed by the direct union of these elements. They are derived in one way or another from the decomposition of nitric acid or of the nitrates; and in the case of the nitrates themselves, it does not appear that they can be produced by the direct combination of nitrogen,

* In 1775, a prize being offered by the French government for an essay on nitrification, a large number of papers on the subject were received and referred to a commission of the Academy. From these, and from the proceedings of the commission, Longchamp drew most of his facts. The substance of them is found in "*Les Memoires des Savans divers*," vol. xi.

oxygen, and a metal.* Viewing the subject by the aid of such lights as science affords, the hypothesis which appears to be best in accordance with the facts known concerning the combination of oxygen and nitrogen is that propounded by Dr. G. C. Schœffer, which is based upon that general chemical action by which various bodies assume the elements of water in such a way as to produce salts of ammonia. This action takes place very commonly with those substances which are produced *from* ammoniacal salts by the *separation* of the elements of water, and may be effected under the influence either of acid or of alkalies, and sometimes by the action of water alone at a high temperature.

Nitrous oxide (N O) will generate the nitrate of ammonia by the assumption of the elements of water; for, by the action on it of water and potash, at an elevated temperature, ammonia is evolved and nitrate of potash formed, showing that there has been a production of nitrate of ammonia and a subsequent decomposition of it by the potash.† Supposing nitrogen to act in the same way, viz: to assimilate four equivalents of water,‡ it will form *nitrate* of ammonia, which, by a well known tendency of the nitrates, will pass into the condition of a nitrate. If potash be present, the nitrate of potash will be produced by decomposition of the ammoniacal salt, and the ammonia set free may be itself nitrified. Without going into theoretical discussion, this hypothesis may be alluded to as one arrived at by legitimate analogies, and which it would be interesting and useful to test by experimental investigations. The foregoing being considered as a brief sketch of the known laws of nitrification and of one or two of the most important speculations on the subject, we may now glance at the various circumstances under which the process goes on in nature on a scale of economic importance.

II. The most important of the sources of nitre is the nitiferous soil of Hindostan, where the earth in certain districts becomes impregnated with the nitrates of lime and of potash, chiefly the latter. This takes place during the dry season, when the ground, which has been flooded by previous rains, is subjected to uninterrupted evaporation. During the rains, a large amount of organic matter must be washed down into the earth and there undergo decomposition.

Now we may suppose that the ammonia rising to the surface undergoes nitrification after the manner pointed out by Kuhlmann,§ or that its oxidation takes place at a considerable depth, in a way similar to that of the cases instanced by Dr. Smith.¶ In either case, the nitrates

* A way of trying this would be by modifying the experiment of Cavendish so as to pass the electric spark through perfectly dry air confined in a tube with metallic potassium or its oxide.

† There are numerous substances which are formed from salts of ammonia by the separation of the elements of water, and which will regenerate the salt by reassuming them. They are known to chemists as amids, anhydrids, or nitryls.

‡ The action consists in the assumption of the water by two equivalents: of the nitrous oxide in one case, and of the nitrogen in the other. In the case of nitrous oxide it may be represented thus: $N_2 O_2 + H_4 O_4 = NO_6 NH_4$; and in the case of nitrogen, $N_2 + H_4 O_4 = NO_4 NH_4$.

§ See page 306.

¶ See page 307.

would accumulate on the surface by reason of the continued evaporation going on there, a process which tends to draw up soluble matters of all sorts from below, and to deposit them above; for the water, as it evaporates, leaves behind it the non-volatile substances dissolved in it, and, after evaporation, is replaced by fresh fluid from the deeper and moister parts of the ground, which brings with it fresh supplies of soluble matter. Either of the modes mentioned will account for the formation of the nitrates, supposing their origin to be from organic matter, and will account for any case in which they accumulate on the surface of the ground during dry and warm weather.

In various other countries the soil, in certain localities, becomes impregnated with considerable quantities of nitrates. This is the case in Persia, in Egypt, in Hungary,* and in Spain. The product is of less importance than that of Hindostan, and the explanation of it probably depends upon the same principles.

The production of nitre in the open air, in such quantities as to be of value, only takes place under particular circumstances, but in *caves* a considerable amount of nitrates is often produced. The earth covering the floor of caverns containing ammonia-producing matters as well as mineral salts, the oxidation of the ammonia into nitrates takes place wherever the air is not entirely stagnant; and being protected from the rain, the nitrates will accumulate, until, after a series of years, the quantity becomes considerable. Longchamp remarks, that the earth in caves nitrifies itself sufficiently for extraction in eight or ten years. Whether we suppose the nitrates to be produced entirely from ammonia or not, the conditions furnished by a cavern, of protection from the weather, together with a moderate and uniform degree of moisture, will be equally operative.

In the western part of this country many caves exist, especially in the geological formation known as the cavern limestone, which have the earth on their floors impregnated with nitrates.† The most noted of these is the Mammoth Cave of Kentucky. During the war of 1812 they were pretty industriously worked for nitre, and, it is said, in large part exhausted. What the exact amount got from them was I have no means of ascertaining; nor have I seen any systematic calculation of what is probably obtainable from them now since they have had time to re-nitrify themselves.‡ All approximative estimates of those who are best informed put it down at but a fraction of the present annual consumption;§ but on this point I speak more from

* Nitre is found in Hungary in large quantity, mostly in boggy places, and in those subject to inundation: there is also much artificial production of it there.

† The formation of nitrates in these caves may in some part be due to a kind of nitrification described further on, (page 312) which takes place on the surface of the rock itself.

‡ The nitrate produced in these caves is nitrate of lime, which has to be converted into saltpetre by the action of a solution of carbonate of potash. Having to furnish the potash adds greatly to the expense of obtaining nitre from such sources. Supposing that we used commercial potash, 100 pounds of the best American ash would be required to form 133 pounds of nitrate of potash. The difficulty of supplying a sufficiency of potash became a serious obstacle in the working of these caves. The wood which grew near the scene of operations was burnt in large quantity, and the ley extracted from its ashes used. Here, however, this impediment arose, that the country being, for the most part, purely limestone, the ashes of plants growing there are much less rich in potash than in lime.

§ I have heard the amount estimated at 150,000 pounds.

general impression than from positive knowledge. It is not to be forgotten that this is a crop which, when once reaped, it will take years to renew.

Probably the best mode of managing these caves, in view of a national emergency, would be to carry into them quantities of a nitrifiable earth, preferably one arising from the decomposition of a feldspathic rock, and to leave it there until a serious call for nitre should arise.

The earth of caverns is nowhere worked as a source of nitre to a very important extent; but a formation of nitrates, which goes on under circumstances somewhat similar to those prevailing in caves, is in Europe one of the chief indigenous modes of production. In old buildings, especially in cellars and in damp outhouses, nitrate of lime is found largely in the mortar, the plaster, and sometimes in a porous limestone which has been used as a building material. We have here, as in caves, a protection from rain, and a moist atmosphere; there is also, however, in many cases a particular exposure to the emanations from decaying organic matters, as in the cellars and foundations of buildings in a badly-drained soil. The decay of walls from the formation of nitrates is known as the saltpetre rot, (saltpetre frass.) The French, during the wars of the revolution, were greatly indebted to this source for their supply of saltpetre.

A rather unique nitre formation is that of South America, where nitrate of soda, a salt not occurring largely elsewhere, is found in immense quantities. In the desert of Atacama, which lies on the western slope of the Andes, at the boundary between Peru and Chile, it forms beds of from two to three feet in thickness, in which it is mixed with various impurities.* It is also diffused through the soil over a large extent of ground. Other parts of the desert are covered with an efflorescence of saline matters, chiefly of sulphate of soda.†

The nitrate of soda has been long known in commerce under the names of cubic nitre and of Chile saltpetre, and being cheaper than nitrate of potash, has been largely used for the manufacture of nitric acid, and for other purposes where a nitrate is required.‡ It is too deliquescent to be readily used as an ingredient of gunpowder, but, like the other nitrates, it can be converted into saltpetre by the action of a salt of potash.

If it were desired to get a large quantity of a nitrate at once, the nitrate of soda would be the most available, being ready formed and accumulated to an immense extent. It is not certainly known whether the production in these South American beds is continuously going on, or whether the nitrate has resulted from actions which have now ceased. Speculations as to the origin of this formation would require a detail of circumstances which it is not, perhaps, worth while entering upon.

* Silliman's Journal, vol. 39, p. 375.

† Chemical Society's Quarterly Journal, 1855, p. 308; also Chemist, 1855, p. 345.

‡ Nitrate of soda was first carried to Europe in 1820. In 1831 it came into use, and since then has been an important article of commerce. The quantity imported into Great Britain in 1850 was about 12,000 tons. The price in 1851 was 15s. per cwt.—*Ure's Dict.*

There are two cases of the production of nitrates in nature which seem rather to belong to a class by themselves, or at least to have strong points of dissimilarity from any other well known instances. I allude to the nitre-bearing chalk of the basin of Paris and the nitriferous caves of Ceylon. In both localities the face of the rock, when chipped off, is found to be impregnated with nitrates, which renew themselves on the exposed surface twice a year or oftener, and sometimes appear as an efflorescence. In the French formation the product is nitrate of lime, which forms where the rock is exposed to the southward, and chiefly in hot and damp weather. The quarries have been long worked, and the annual product is said to be about 15,000 pounds.

The nitre caves of Ceylon, which are between twenty and thirty in number, are excavations in a porous rock, consisting of limestone, talc, and feldspar. The nitrates formed are those of potash, lime, and magnesia, the former predominating. Several of the caves were visited and examined by Mr. John Davy. One of them he describes particularly as a cavity of regular shape, about 200 feet long and 100 broad. In it sixteen workmen are employed during six months of the year in chipping off the face of the rock and in extracting the nitre from the stone thus collected. Each of the men pay as an annual tithe to the government a half cwt. of nitre, so that the total quantity obtained must be considerable.

In these caves, as well as in the French quarries, it is only to the depth of a fraction of an inch below the surface of the rock that the nitrates are found, and after this thin coat has been removed it requires from one to six months for the fresh surface to become impregnated. In both these instances the conditions under which nitrification goes on are very similar, taking place on the surface of a porous rock which is continually moist, and is exposed to a warm temperature, for in France the nitrates form only on a southern exposure, and mainly during summer. The action is a more rapid one than that of the ordinary nitrification of the earth in caverns, and is to be distinguished from it. The formation of nitrates on the surface of a rock is said to take place to a less extent in other localities, among them in some caves in this country, but the nitrification in our western caves appears to be, mainly at least, that of the earth on their floors.

Both the Paris chalk and the Ceylonese caves have been cited as good arguments for nitrification without access of organic matters. We may, perhaps, imagine the filtration of water charged with the products of organic decomposition into the rock, and it has been supposed by some that the nitrogen of the animal remains which are contained in limestone may become a source of nitrates. There is one point, however, to be noted in regard to the nitriaries of the Seine: that the chips of stone, after being lixiviated, are heaped up into walls, on the surface of which the nitrate forms as on the rock itself. This seems to point to the texture of the rock as the cause of nitrification rather than any supply of organic matter.

III. Such are the different circumstances under which nitrates are produced in nature. An artificial mode of nitrification has been long practiced, and on the continent of Europe a large amount of labor and attention has been bestowed upon it.*

The general plan has been already alluded to, (page 306, note.) It consists in mixing earth, old mortar, and rubbish of various kinds with animal matters, (stable manure, &c.,) making the whole into heaps called nitre beds, and keeping these exposed to the air and moderately moist until nitrification is completed. This is practiced, under many variations of detail, in different places. The most perfect system seems to be the Prussian, according to which the mass is made into walls, which are steep on one side and cut into steps on the other. The tops of these steps are made into gutters, in which water is poured which percolates the wall and evaporates from the opposite or vertical side. On that side, of course, the nitrates accumulate and effloresce, and the earth from it being scraped off from time to time, is leached for the purpose of extracting them. While this is done, fresh material is added to the steps, so that the size and shape of the wall is preserved. In many places the materials are piled into heaps and turned over, from time to time, to expose a fresh surface to the air.

The great objection to all nitre beds I should say to be this: that while nitrates are formed on the surface, where the air has free access, in the interior of the heap the organic matters present tend to reconvert them into ammonia; and thus, between the influences of two opposing forces, the process of nitrification goes on but slowly. It is found in practice that it requires about three years for an ordinary nitre bed to become fit for extraction, and as, during that time, much labor must be bestowed upon it, and materials used that would be valuable for agricultural purposes, the utility of keeping them up has been much questioned in Europe.

The large importations of nitre from India, made in recent times, have diminished considerably the cultivation of the saltpetre plantations, as they are called, and, in fact, they are found not to be remunerative under present circumstances, and are too slow in their operation to serve as a provision against sudden emergencies. If, instead of making these heaps, the ammoniacal exhalations from the organic matters were made to pass, duly mixed with air and moisture, into a porous earth or other nitrifiable mass, the transformation would, in all probability, be much more rapid.

IV. We may now inquire what better modes of artificial nitrification are suggested by our present knowledge of the nature of the process and by the industrial means at our command. The various possible plans divide themselves into two general classes: first, those which involve the oxidation of ammonia; and second, those which depend upon the fixation of the nitrogen of the air. The first of these more especially demands our attention, as being of more certain feasibility,

* In Sweden every peasant is obliged to maintain a nitre bed, and to furnish a certain amount to the government.

or at least as requiring less recondite investigations to bring them into practical operation. We know of various plans by which the conversion of ammonia into nitrates has been effected, and can devise many more by which, in all probability, it would be effected. The first point to be considered, in connexion with this, is the means of supplying ammonia.

Ammonia is largely produced in the manufacture of coal gas, from which, after leaving the retorts, it is removed; partly by condensation as ammoniacal liquor; partly by a sort of mechanical entanglement in the lime purifier; and sometimes by the agency of water, with which the whole body of gas is washed; and sometimes, also, a special purifier is used for the ammonia, whose presence in the gas is injurious. The ammoniacal liquor is sometimes used for the manufacture of compounds of ammonia, sometimes as a manure, but frequently is allowed to run to waste. From the amount experimentally obtained from coal, it has been estimated that the ammonia producible from one ton would form about seven pounds of sulphate of ammonia.* If the ammonia in this were nitrified it would produce 10.71 pounds of saltpetre. This amount of ammonia is probably not all produced from coal by the ordinary distillation for gas, and what is evolved is in large part not collected.

The cheapest of the salts of ammonia in use is the sulphate, which costs eighty or ninety dollars a ton; a large part of which cost is that of the sulphuric acid used in its manufacture. A ton of this, if used for the production of saltpetre, would produce about 3,300 pounds of the latter. A rectified ammoniacal liquor, at one time sold in England, afforded ammonia at one-third of the expense incurred by buying it in the form of the sulphate. It was obtained by distilling the liquor of the gas-works, but never came into general use.

The sulphate of ammonia is used largely as a nitrogenous manure, and for this purpose the ammoniacal liquor itself is not very available since most of it is produced during the winter, when it cannot be applied to land, and the ammonia being volatile cannot easily be kept, unless it is converted into a non-volatile compound.

For the purpose of generating nitre the ammoniacal liquor could be used as fast as produced, either being condensed into a portable bulk for transportation or used on the spot. That part of the ammonia which escapes condensation in the gas liquor may be removed from the gas by various methods, one of which now in use is that of

* Analysis by J. C. Wrightson. Estimates of the ammonia obtainable from coal are, many of them, considerably greater than this; but some assertions that have been made with regard to the large amounts of this and of other products got from coal by certain methods of distillation are to be received with suspicion. The assumption that all the nitrogen contained in coal is given off as ammonia during distillation must be altogether erroneous, and only deserves mention because it has recently been advanced, apparently without suspicion of its fallacy. Thus we find upon such grounds the extravagant estimate made that one ton of coal will produce a hundred weight of sulphate of ammonia.—(Chemist, 1855, p. 339.) Taking the estimate which I have given in the text, the gas-works of the city of London produce enough ammonia for the formation of about 2,000 tons of saltpetre annually.

Mr. Croll, in whose purifier sulphuric acid is used for the purpose of combining with the ammonia. This has been adopted by various gas-works in London, where several tons of sulphate of ammonia are said to be produced by it daily.*

There are certain plans that, as far as I know, have never been tried, some one of which would, in all probability, be the most convenient for the purpose of removing ammonia from gas, with a view to the subsequent production of nitre from it. These involve the use of substances which form ammoniacal compounds easily decomposable by heat, such as phosphate of magnesia or boracic acid.

Ordinary animal matters, in their moist state, furnish enough ammonia for the production of from one-fourth to one-third of their weight of saltpetre. The most ancient mode of obtaining an ammoniacal compound is that practiced in Egypt, which consists in the distillation of the soot which arises from the combustion of the dried dung of animals. Ammonia is also made by the destructive distillation of bones and of other animal matters, such as blood, scraps of hide, &c. When bones are used, bone charcoal is got as residue, and other animal substances yield a charcoal which is used for the manufacture of Prussian blue. Ammonia is evolved from animal matter either by distillation or by spontaneous decomposition, and much that is now refuse might be utilized by a properly-arranged system of nitrification. The distillation of peat has lately become a source of the salts of ammonia.

We may, in brief terms, say that the production of ammonia is from cheap and abundant sources, and that the supply is capable of being augmented on occasion to any amount required.

The means of oxidizing ammonia into the condition of a nitrate may be considered under two heads:

1st. Those which depend upon the direct action of the oxygen of the air under such conditions as are alluded to on page 306, or under some modification of them. The general principles of this mode require no comment here.†

2d. Those in which substances are used, termed carriers of oxygen, that take up oxygen from the air, and part with it to the body to be oxidized. Thus the deutoxide of manganese, under the influence of heat, will give up a part of its oxygen to ammonia, converting it into a nitrate; and the reduced oxide, on being heated, with exposure to the air, will resume oxygen and pass again into the condition of a deutoxide, which can be used for the conversion of fresh ammonia, and so on, the same oxide being, in this way, used continuously. Kuhlmann, whose researches have already been noticed, proposed, after experiments on the subject, the use of the deutoxide of manga-

* In this country the gas-works throw away the ammonia even of the ammoniacal liquor. At least that is the case in those of Philadelphia, one of the largest and best conducted.

† A patent was taken out in England, in 1852, for the conversion of ammonia into a nitrate by the agency of porous bodies, of which a variety are specified, (spongy platinum, &c.) At the same time, of course, a base, such as potash, was to be used for the purpose, as it was expressed, of fixing the nitric acid. The patent did not certainly involve any principle previously unknown, nor does it appear that the patentee had an experimental knowledge of the value of any particular mode of procedure.

nese in this way for the purpose of supplying saltpetre in the event that France should be engaged in a war which should cut her off from foreign sources of this necessary article. Other substances, deutoxide of barium, &c., have the same property with deutoxide of manganese.

There is one body which has been found to have remarkable power in bringing about the oxidation of ammonia, the precise mode of whose action may be a little doubtful. According to the experiments of Mr. Ashe, when the vapor of ammonia, mixed with air, comes into contact with freshly-prepared sesquioxide of chromium, it undergoes such rapid oxidation that the oxide glows and remains red hot until the ammonia is consumed. This takes place not only with ammonia, but with many other combustible vapors.*

Mr. Ashe supposes the rationale of this action of the chrome oxide to be the same as in the similar case of spongy platinum—to depend, in other words, upon the physical condition of great porosity, and this is, undoubtedly, the main cause, but possibly the chrome acts also as a carrier of oxygen by passing alternately from a higher to a lower degree of oxidation. However that may be, this employment of the oxide of chromium deserves attention, as promising to furnish a most excellent mode of nitrification.

The second mode of producing nitrates (by the combination of the elements of the atmosphere) is one which has experimentally been shown to be possible, and which probably goes on upon a large scale in nature in conjunction with the first-mentioned method. The economy of a manufacture based on this mode, if it could be brought into extensive operation, is very apparent; but the subject has been so imperfectly investigated as yet, that what could be said upon its feasibility would be merely conjectural.

V. The fifth and concluding branch of the topic is this: By what means may experimental science best be advanced in regard to the subject of nitrification?

It must strike every one that, considering the importance of the subject and the length of time during which an interest has been felt in it, our actual knowledge of it is remarkably limited. Dumas remarks, in this connexion, that such a length of time and so much trouble would be required to watch the process as it goes on in nitre beds, that no one has had the courage to undertake it; and the same thing holds, to a great extent, with regard to the study of nitrification under any aspect. Within the last twenty-five years experiments have been made from time to time that have thrown light on particular points; and occasional observations upon the natural production of nitre have given us something to build conjecture upon, but inquiries of either kind have generally not been pushed beyond the isolated fact in which they began, but have stopped after showing that a nitrate might be generated in some particular way, or describing some locality in which it was found. Even such contribu-

* Lond. Ed. and Dub. Ph. Jour., 1853.

tions to our knowledge have not been frequent, and most of what has been done in an experimental way has been in connexion with researches in agricultural chemistry.

In a subject so complicated, involving the solution of so many questions, each of which by itself is but an inconsequential step towards a complete theory, the demonstration of a few detached truths does not seem to be a satisfactory return for any great labor or expense, and no one could think of taking it up in a thorough way without a greater command of time and means than is usually possessed by chemists. The most important drawback to a determination of proper means for the artificial production of saltpetre is to be found in the want of a stimulus from manufacturing enterprise. All such manufacture has been greatly discouraged of late years by the large importations from India and South America; and the prospect of any considerable and permanent rise in prices is too remote to be the occasion of speculation or outlay.

We have, indeed, every reason to believe that if a certain amount of progress were once made in the matter it would become an important and profitable branch of industry, under all circumstances; but new methods of manufacture generally owe their development not to their promise of future usefulness, but to the pressure of some immediate want.

At present, the subject of nitrification is of interest, not so much to the practical chemist, who seeks for some easy step to immediate profit, as to the statesman, who looks forward to times of national emergency, when nitre shall become an article of vital necessity, and the usual modes of obtaining it be cut off. This country is so situated as to make this a matter of peculiar interest. No other nation, perhaps, can in any war in which it is likely to be engaged be so completely deprived of this important article. We have no saltpetre plantations in actual operation, not many buildings whose walls we could expect to find much nitrified, and our only natural resource is one which, we have every reason to believe, would be a very insufficient one, viz: that of our western caves.

Great Britain could, in a war with us, very easily stop our importation of saltpetre from her own possessions in Hindostan, and that of nitrate of soda from the few ports of South America whence it can be obtained, and could check, to a great extent at least, attempts on our part at getting supplies from Europe. While we could be severely pressed in this way by a single power, a combination against us would increase our isolation, and call on us for still more exhausting efforts. To provide against such contingencies is, indeed, a thing entirely practicable.

While modern warfare calls for enormous expenditures of saltpetre, modern science has the power of finding means for a corresponding production. But this power, to become available, must be studied; and its study, which the ordinary course of peaceful events gives no stimulus to, should be the especial care of government, as one of the most important means of providing for the common defence. Not only should principles be established, but details should be de-

terminated on, and some adequate system of operations should be at least sketched out, even if not brought into present practice. To do this will not be the work of a day, nor, perhaps, of a year; it will require thought and labor, as well as enterprise, and it should not be left to a time of hurry and emergency.

I respectfully submit the above paper, hoping that it may be of some assistance towards the desired object. In it I have sought rather to give a statement of the different questions to be considered than to enter into lengthy discussions of them. If a fuller detail should be desired on any particular branch of the subject, I shall be happy to do whatever lies in my power towards furnishing it, but I am strongly inclined to think that reliable conclusions on those points that I have left untouched or unsettled can hardly be attained by any other means than those of original investigation.

NOTE BY THE AUTHOR.—A great obstacle to the cheap artificial production of nitrate of potash is the high price of the potash which must be used in its manufacture.

The nitrates of soda, of lime, and of magnesia, which can be more cheaply obtained than ordinary nitre, have not heretofore been used in the manufacture of gunpowder, for the reason that they have a strong tendency to absorb water, and to render damp the powder into whose composition they enter.

Of late years, however, water-proof cartridges of various kinds have been brought into use, and it would be perfectly feasible to employ in these gunpowder made from the more deliquescent nitrates.

Solid blocks of gunpowder with a water-proof coating of collodion are said to have been tried with good results in both cannon and small arms; and if this, or any equivalent contrivance, should be introduced into our military service, it would, by facilitating the use of the cheaper nitrates, open a way through which we might render ourselves less dependent upon foreign countries for a very essential material of war.

One of the various things which it may be recommended to the government to do is, to have made and tried gunpowder, manufactured from the nitrate of soda, and put up in water-proof cartridges, or in collodion-covered blocks.

NOTES ON THE HISTORY OF PETROLEUM OR ROCK OIL.

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(From the Canadian Naturalist and Geologist.)

PUBLIC attention has lately been drawn to the petroleum furnished by the oil wells in Canada and the United States, and we have therefore thought it well to bring together some few facts which may serve to explain the origin of this and of similar substances, including naphtha, petroleum or rock oil, and asphalt or mineral pitch, all of which are forms of bitumen, the one being solid and the others fluid at ordinary temperatures. These differences are, in many cases at least, due to subsequent alterations; the more liquid of these substances are mixtures of oils differing in volatility, and by exposure to the air become less fluid, and partly by evaporation, partly by oxidation from the air, eventually become solid and are changed into mineral pitch. These substances, which are doubtless of organic origin, occur in rocks of all ages, from the lower silurian to the tertiary period inclusive, and are generally found impregnating limestones, and more rarely, sandstones and shales. Their presence in the lower palæozoic rocks, which contain no traces of land plants, shows that they have not been in all cases derived from terrestrial vegetation, but may have been formed from marine plants or animals; the latter is not surprising when we consider that a considerable portion of the tissues of the lower marine animals is destitute of nitrogen, and very similar in chemical composition to the woody fibre of plants. Besides the rocks which contain true bitumen, we have what are called bituminous shales, which, when heated, burn with flame, and by distillation at a high temperature yield, besides inflammable gases, a portion of oil not unlike in its characters to petroleum. These are, in fact, argillaceous rocks intermixed with a portion of organic matter allied to peat or lignite, which, by heat, is decomposed and gives rise to oily hydrocarbons. These inflammable or lignitic shales, which may be conveniently distinguished by the name of *pyroschists*, (the *brandschiefer* of the Germans) are to be carefully distinguished from rocks containing ready-formed bitumen; this being easily soluble in benzole or sulphuret of carbon can be readily dissolved from the rocks in which it occurs, while the pyroschists in question yield, like coal and lignite, little or nothing to these liquids.

It is the more necessary to insist upon the distinction between lignitic and bituminous rocks, inasmuch as some have been disposed to regard the former as the source of the bitumen found in nature, which they conceive to have originated from a slow distillation of these matters. The result of a careful examination of the question has, however, led us to the conclusion that the formation of the one ex-

cludes more or less completely that of the other, and that bitumen has been generated under conditions different from those which have transformed organic matters into coal and lignite, and probably in deep water deposits, from which atmospheric oxygen was excluded. Thus in the palæozoic strata of North America we find in the Utica and Hamilton formations highly inflammable pyroschists, which contain no soluble bitumen, and the same is true to a certain extent of some limestones, while the Trenton and Corniferous limestones of the same series are impregnated with petroleum or mineral pitch, and, as we shall show, give rise to petroleum springs. The fact that intermediate porous strata of similar mineral characters are destitute of bitumen, shows that this material cannot have been derived from overlying or underlying beds, but has been generated by the transformation of organic matters in the strata in which it is met with. This conclusion is in accordance with that arrived at by Mr. S. P. Wall, in his recent investigations in Trinidad. He has shown that the asphalt of that island and of Venezuela belongs to strata of the tertiary formation, (of upper miocene or lower pliocene age,) which consist of limestones, sandstones and shales, associated with beds of lignite. The bitumen is found not only in the famous pitch lake, but *in situ*, where it is confined to particular strata, which were originally shales containing vegetable remains; these have undergone "a special mineralization producing a bituminous matter instead of coal or lignite. This operation is not attributable to heat, nor of the nature of a distillation, but is due to chemical reactions at the ordinary temperature, and under the normal conditions of climate." He also describes wood partially converted into bitumen, which last, when removed by solution, leaves a portion of woody tissue.—(Proc. Geol. Soc. London, May, 1860.)

The sources of petroleum and mineral pitch in Europe and in Asia are for the most part like those just named, confined to rocks of newer secondary and tertiary age, though they are not wanting in the palæozoic strata, which in Canada and the United States furnish such abundant supplies of petroleum. In the great palæozoic basin of North America bitumen, either in a liquid or solid state, is found in the strata at several different horizons. The forms in which it now occurs depend in great measure upon the presence or absence of atmospheric oxygen, since by oxydation and volatilization the naphtha or petroleum, as we have already explained, becomes slowly changed into asphalt or mineral pitch, which is solid at ordinary temperatures. It would even appear that by a continuance of the same action the bitumen may lose its fusibility and solubility, and become converted into a coal-like matter. Thus in the calciferous sandrock in New York a black substance, which has been called anthracite, occurs in cavities with crystals of bitter spar and quartz. It sometimes coats these crystals or the walls of the cavities, and at other times appears in the form of buttons or drops, evidently, according to Mr. Vanuxem, having been introduced into these cavities in a liquid state, and subsequently hardened as a layer above the crystals, which have conformed to them, showing that this coal-like matter was once in a plastic

state. It is very pulverulent, brittle, of a shining black, and according to Vanuxem yielded but little ash, and $11\frac{1}{2}$ per cent. of volatile matter, which he regarded as water, (Vanuxem, Geology of New York, iii, 33.) A similar material occurs in the Quebec group in Canada, the equivalent of the calciferous sandrock, and fills cavities and fissures in the limestones, sandstones, and even in the accompanying trap rocks, as at Quebec, Orleans island, Point Levis, and at Acton, presenting mamillary surfaces as noticed by Vanuxem, which evidently show that it has once been semi-fluid. This matter from the first two localities is completely infusible, and insoluble in benzole; it readily crumbles between the fingers and gives a very black powder. When exposed to a high temperature it gives off abundance of inflammable strong-smelling vapors, which condense into a tarry oil, and leave a black residue, which when heated slowly burns away, leaving only a trace of ash. The volatile portion is equal to from 19.5 to 21.0 per cent. The mineral from the Acton copper mine is much harder and less friable, and approaches to anthracite in its characters. When heated it gives off watery vapor without any bituminous odor. Its loss by heat was 6.9 per cent., and the residue of ash was equal to 2.2 per cent.

An evidence of the presence of unaltered petroleum in almost all the Lower Silurian limestones is furnished by the bituminous odor which they generally exhibit when heated, struck, or dissolved in acids. In some cases petroleum is found filling cavities in these limestones, as at Rivière à la Rose (Montmorenci,) where it flows in drops from a fossil coral of the Birdseye limestone, and at Pakenham, where it fills the cavities of large orthoceratites in the Trenton; from some specimens nearly a pint of petroleum has been obtained; it is also said to occur in the township of Lancaster in the same formation. The presence of petroleum in the Lower Silurian rocks of New York is shown in the township of Guilderland, near Albany, where, according to Beck, considerable quantities of petroleum are collected upon the surface of a spring which rises through the Hudson river or Loraine shales. On the Great Manitoulin island, also, according to Mr. Murray, a petroleum spring issues from the Utica state, and he has described another at Albion Mills, near Hamilton, rising through the red shales of the Medina group; these have probably their origin in the Lower Silurian limestones, which may in some localities prove to be valuable sources of petroleum.

In the Upper Silurian and Devonian rocks bitumen is much more abundant. Eaton long since described petroleum as exuding from the Niagara limestone; and this formation throughout Monroe county, in western New York, is described by Mr. Hall as a granular crystalline dolomite including small laminæ of bitumen, which give it a resinous lustre. When the stone is burned for lime the bitumen is sometimes so abundant as to flow like tar from the kiln. In the coralliferous limestone at Black Rock, on the Niagara river, petroleum is described as occurring in cavities, generally in the cells of fossil corals, from which, when broken, it flows in considerable quantities.

It also occurs in similar conditions in the Cliff limestone (Devonian) of Ohio.

Higher still in the series, at the base of the Hamilton group, occur what in New York have been called the Marcellus shales; these enclose septaria or concretionary nodules which contain petroleum, while at the summit of the same group similar concretions holding petroleum are again met with. The sandstones of the Portage and Chemung group in New York are in many places highly bituminous to the smell, and often contain cavities filled with petroleum, and in some places seams of indurated bitumen. A calcareous sandstone from this formation at Laona, near Fredonia, in Chataouque county, contains more than two per cent. of bituminous matter. At Rockville, in Alleghany county, according to Mr. Hall, the same sandstones are highly bituminous and give out a strong odor when handled, and in the counties of Erie, Seneca, and Cattaraugus abundant oil springs rise from the sandstones, and have been known to the Seneca Indians from ancient times. In the northern part of Ohio, according to Dr. Newberry, petroleum is found to exude in greater or less quantity from these sandstones wherever they are exposed, and the oil wells of Pennsylvania and Ohio are sunk in these Devonian sandstones, often through the overlying carboniferous conglomerate, and in some cases apparently, according to Newberry, through the sandstones themselves, which are supposed by him to be only reservoirs in which the oil accumulates as it rises through fissures from a deeper source; in proof of which he mentions that in boring wells near to each other the most abundant flow of oil is met with at variable depths. In some instances the petroleum appears to filter slowly into the wells from the porous strata around, which are saturated with it, while at other times the bore seems to strike upon a fissure communicating with a reservoir which furnishes at once great volumes of oil. An interesting fact is mentioned in this connexion by Mr. Hall. In the town of Freedom, Cattaraugus county, New York, is a spring which had long been known to furnish considerable quantities of petroleum. On making an excavation about six yards distant, to the depth of fourteen feet, a copious spring of petroleum arose, and for some time afforded large quantities of oil; after which the supply diminished in both the old and new springs, so that it is now less than at the first settlement of the country. Notwithstanding its general distribution throughout a considerable region in the adjacent portions of New York, Pennsylvania, and Ohio, it is only in a few districts that it has been found in quantities sufficient to be wrought with profit. The wells of Mecca, in Trumbull county, Ohio, have been sunk from 30 to 200 feet in a sandstone which is saturated with oil; of 200 wells which have been bored, according to Dr. Newberry, a dozen or more are successfully wrought, and yield from five to twenty barrels a day. The wells of Titusville, on Oil creek, Pennsylvania, vary in depth from 70 to 300 feet, and the petroleum is met with throughout. The oil from different localities varies considerably in color and thickness, and in its specific gravity, which ranges from 28° to 40° Baumé, (from .890 to .830.)

The valley of the Little Kanawha, in Virginia, which is to be looked upon as an extension of the same oil-bearing region, contains petroleum springs which, so long ago as 1836, according to Dr. Hildreth, yielded from fifty to a hundred barrels yearly. It here rises through the carboniferous strata, and, as elsewhere, is accompanied by great quantities of inflammable gas.

The black inflammable shales of the Devonian series in western Canada, which were formerly referred to the Hamilton group, and are now considered to belong to the base of the overlying Portage and Chemung, appear at Kettle Point, on Lake Huron, and in portions of the region southward to Lake Erie; but the oil wells sunk in Enniskillen show that the source of the oil is really below the horizon of these shales, inasmuch as the underlying argillaceous shales and limestones of the Hamilton group are there found near the surface, and have been penetrated 120 feet, at which depth oil is still met with, leaving but little doubt that it is derived from the limestones beneath, which both in New York and in Canada are impregnated with petroleum. A somewhat slaty brownish-black bituminous dolomite belonging to the corniferous limestone from Pine creek, near Alma, in Kincardine, gave me not less than 12.8 per cent. of bitumen, fusible and readily soluble in benzole, and another from the Grand Manitoulin island, which was a brown crystalline dolomite, yielded from 7.4 to 8.8 per cent. of similar bitumen. The solid form of this bitumen at the outcrop of the rocks is probably due to the action of the air.

The existence of liquid bitumen in the corniferous limestone in western Canada was pointed out as long ago as 1844 by Mr. Murray, who tells us that this rock is generally bituminous, and that cavities in it are often filled with petroleum; the quarries near Gravelly bay, in Wainfleet, are cited as an example.—(Report of Geological Survey, 1846, p. 87.) In the report for 1850 we find a notice of what are called oil springs, in which petroleum rises to the surface of the water near the right bank of the Thames, in Mosa, and in two places on Bear creek, in Enniskillen. Subsequently Mr. Murray described a considerable deposit of solid bitumen or mineral tar, which occurs in the same township, extending over about half an acre, and in some places two feet in thickness, doubtless formed by the drying up of petroleum springs.—(Report for 1851, p. 90.) I had already, in the report for 1849, p. 99, described this bitumen from specimens in the Museum of the Geological Survey, and called attention to its economic applications, remarking that “the consumption of this material in England and on the continent for the construction of pavements, for paying the bottoms of ships, and for the manufacture of illuminating gas is such that the existence of these deposits in the country is a matter of considerable importance.” At this time solid bitumen was thus employed, but in the liquid form of petroleum its use was chiefly confined in Europe to medicinal purposes. Under the names of Seneca oil and Barbadoes tar it had long been known and employed medicinally by the native tribes of America. Its use for burning, as a source of light or heat, in modern times has been chiefly confined to

Persia and other parts of Asia, although in former ages the wells of the Island of Zante, described by Herodotus, furnished large quantities of it to the Grecian Archipelago, and Pliny and Dioscorides describe the petroleum of Agrigentum, in Sicily, which was used in lamps under the name of Sicilian oil. The value of the naphtha annually obtained from the springs at Bakoum, in Persia, on the Caspian sea, was some years since estimated by Abich at about \$600,000, and the petroleum wells of Rangoon, in Burmah, are said to furnish not less than 400,000 hogsheads yearly. In the last century the petroleum or naphtha obtained from springs in the Duchy of Parma was employed for lighting the streets of Genoa and Amiano. But the thickness, coarseness, and unpleasant odor of the petroleum from most sources were such that it had long fallen into disuse in Europe, when in 1847 the attention of Mr. Young, a manufacturing chemist of Glasgow, was called to the petroleum which had just been obtained in considerable quantities from a coal mine at Riddings, in Derbyshire, from which, by certain refining processes, he succeeded in preparing a good lubricating oil. This source, however, soon becoming exhausted he turned his attention to the somewhat similar oils which Reichenbach and Selligue had long before shown might be economically obtained by the distillation of coal, lignite, peat, and pyroschists. To this new industry Mr. Young gave a great impetus, and in connexion with it attention was again turned to the refining of liquid and solid bitumens, it being found that the latter by distillation gave great quantities of oils identical with those from petroleum. About the year 1853 the attention of speculators was turned to the deposits of bitumen in Enniskillen, just described, but it was not till 1857 that Mr. W. M. Williams, of Hamilton, with some associates, undertook the distillation of this tarry bitumen, when they soon found that by sinking wells in the clay beneath it was possible to obtain great quantities of the material in a fluid state. Large numbers of wells were subsequently sunk by Mr. Williams and others in the southern part of the township of Enniskillen, along the borders of Black creek, and also about ten miles further north on Bear creek. Nearly one hundred wells had been sunk when I visited the place in December last, and many more have since been bored. Of these but a small proportion furnish available quantities of oil, but the whole amount already obtained from the district is perhaps not less than 300,000 or 400,000 gallons. Owing to the difficulties of communication and of procuring casks sufficient for the oil these wells have not yet been wrought in a continuous manner; large quantities of oil are, however, taken out at intervals of some days, and it is probable that if continuously worked the supply would be still greater. Here, as in Pennsylvania, considerable variations are found in the quality of the oil; that from the wells on Black creek is more liquid and less dense than the oil from Kelly's wells on Bear creek, and it is said that wells recently sunk to a considerable depth in the rock have yielded an oil still thinner, lighter colored, and less dense, which is prized as being more profitable for refining. The present wholesale price of the crude oil from Kelly's wells, delivered at the Wyoming station on the

Grand Trunk railway, is about thirteen cents a gallon. The oil obtained by Mr. Williams is refined in Hamilton, while that from the northern part of the township has hitherto been sent to Boston, though refining works are now being erected at the wells. The process of refining consists in rectifying by repeated distillations, by which the oil is separated into a heavier part employed for lubricating machinery, and a lighter oil, which, after being purified and deodorized by a peculiar treatment with sulphuric acid, is fit for burning in lamps.

These wells occur along the line of a low broad anticlinal axis which runs nearly east and west through the western peninsula of Canada, and brings to the surface in Enniskillen the shales and limestones of the Hamilton group, which are there covered with a few feet of clay. The oil doubtless rises from the corniferous limestone, which, as we have seen, contains petroleum; this being lighter than the water which permeates at the same time the porous strata, rises to the higher portion of the formation, which is the crest of the anticlinal axis, where the petroleum of a considerable area accumulates and slowly finds its way to the surface through vertical fissures in the overlying Hamilton shales, giving rise to the oil springs of the region. The oil is met with at various depths; in some cases an abundant supply is obtained at forty feet, while near by it is only met with at three or four times that depth, and sometimes only in small quantities. Everything points to the existence of separate fissures communicating with a deep-seated source. At Kelly's wells, however, it would appear that a reservoir has been formed much nearer the surface, where in a bed of gravel and boulders, underlying the superficial clays, the oil rising from the rocks beneath has accumulated. The inflammable gas which issues from the wells is not necessarily connected with the petroleum, inasmuch as it is an almost constant product of the decomposition of organic matters, and is copiously evolved from rocks which are destitute of bitumen. It is similar to the gas of marshes and to the fire damp of coal mines. A curious circumstance is, however, noticed by Mr. Robb; the gas which accumulates in the oil pits becomes charged with vapors which produces upon the workmen a sort of intoxication like nitrous oxyd.* This is not surprising when we remember that volatile hydrocarbons, like amylene, closely related to the hydrocarbons of petroleum, produce similar effects when their vapor is respired.

The oil wells of the United States are for the most part sunk in the sandstones which form the summit of the Devonian series, but the oils of western Virginia and southern Ohio rise through the coal measures which overlie the Devonian strata, while the wells of Enniskillen are situated much lower, and are sunk in the Hamilton shales, which immediately overlie the corniferous or Devonian limestone. It is not impossible that in Ohio some of the higher strata, such as the sandstone, were originally impregnated with the bitumen, but in Canada,

* Mr. Charles Robb, C. E., has published in the Canadian Journal for July an interesting paper on the oil wells of Enniskillen, to which, as also to a paper by Prof. E. B. Andrews, of Ohio, in Silliman's Journal for July, I am indebted for several facts.

from the absence of this substance diffused through the shales in question, we are forced to assign it to a lower horizon, which is doubtless that of the bituminous Devonian limestone. This view I have for some time maintained in opposition to those who conceive the bitumen to be derived from the black pyroschists; see my lecture before the Board of Arts, reported in the *Montreal Gazette* of March 1, where I asserted that the source of the petroleum was to be sought in the bituminous Devonian and Silurian limestones; besides the cor-niferous limestone (Devonian,) we have shown that both the Niagara and the Trenton, (of Upper and Lower Silurian age,) contain petroleum. The question of the extent of the supply of petroleum is not easily answered; the oil now being wrought is the accumulated drainings of ages, concentrated along certain lines of elevation, and the experience of other regions has shown that these sources are sooner or later exhausted; but though the springs of Agrigentum, like those of Derbyshire, have nearly ceased to flow, those of Burmah and Persia still furnish, as they have for ages past, immense quantities of oil; nothing but experience can tell us the richness of the subterranean reservoirs. It is not probable that the Devonian limestone is equally rich in petroleum throughout its whole distribution, but the exposures of it in the west are too few to enable us as yet to say in what portions the petroleum predominates; as, however, this rock underlies more than one-half of the western peninsula, we may look for petroleum springs much further east than Enniskillen. A well yielding considerable quantities of petroleum is said to occur in the township of Dereham, about a quarter of a mile southwest of Tilsonburg, and we may reasonably expect to find others along the line of the anticlinal, or of the folds which are subordinate to it.

It is now many years since Sir William Logan described the occurrence of petroleum springs in Gaspé, and collected specimens of the oil, which are preserved in the Geological Museum. One of these, near Gaspé bay, is described as occurring on the south side of the St. John's river, about a mile and a half above Douglstown, where it may be collected by digging pits in the mud on the beach. Another locality is about 200 yards up a small fork of the Silver brook, which falls into the southwest arm six or seven miles above Gaspé basin. The oil collects in pools along the stream, and may be gathered in considerable quantities. The cavities in a greenstone dyke on Gaspé bay were also found to be filled with petroleum, and the odor of it from the rock was perceived at a considerable distance. The dyke, which marks a fold in the stratification, runs in the direction of the petroleum springs, and the evidences of the distribution of petroleum are thus, as Sir William Logan has remarked, visible along a line of twenty miles.—(Report for 1844, p. 41.) Attention has recently been drawn to these indications, and a company formed, with a view of exploring this region for petroleum. Here, as well as in western Canada and the United States, the connexion is evident between the springs and undulations of the strata which favor the accumulation of the petroleum.

SUPPLEMENTARY NOTE.

We have stated in the preceding paper that the different mineral combustibles have been derived from the transformations of vegetable matters, or in some cases of animal tissues analogous to these in composition. The composition of woody fibre or cellulose, in its purest state, may be represented by $C_{24}H_{20}O_{20}$, or as a compound of the elements of water with carbon; the incrusting matter of vegetable cells, to which the name of lignine has been given, contains, however, a less proportion of oxygen and more carbon and hydrogen than cellulose, so that the mean composition of recent woods, as deduced from numerous analyses of various kinds, may be represented by $C_{24}H_{18.4}O_{16.4}$. We may conceive of four different modes of transformation of woody fibre, all of which probably intervene to a greater or less degree in the production of mineral combustibles; and in considering these changes we shall for greater simplicity adopt for the composition of woody fibre the first-named formula $C_{24}H_{20}O_{20}$.

I. When wood is exposed to the action of moist air, oxygen is absorbed, and carbonic acid and water are evolved in the proportion of one equivalent of the first for two of the last. We may suppose that for H_2 , which is oxydized by O_2 from the air, the wood loses CO_2 ; so that while the carbon increases in amount, the proportions of oxygen and hydrogen are unchanged. In this way an equivalent of cellulose, by absorbing sixteen equivalents of oxygen and losing eight of carbonic acid, ($8 CO_2$), and sixteen of water, ($16 HO$), would leave $C_{16}H_4O_4$. Such is the nature of the decay of wood when exposed to the air, and the process, could it be carried out, would leave a residue of carbon only. If, however, the wood is deeply buried and excluded from the oxygen of the air, two reactions are conceivable.

II. The whole of the oxygen of the wood may be given off in the form of carbonic acid, while the hydrogen remains with the residual carbon. The abstraction of ten equivalents of carbonic acid from one of woody fibre would leave a hydrocarbon $C_{14}H_{20}$.

III. Instead of combining exclusively with the carbon, a part of the oxygen of the wood may be set free as water, in combination of the hydrogen. The abstraction from an equivalent of woody fibre of four equivalents of carbonic acid and twelve of water would leave a hydrocarbon $C_{20}H_8$.

IV. These decompositions are, however, never so simple, as we have supposed in II and III; for a portion of hydrogen is at the same time evolved in combination with carbon, chiefly as marsh gas, C_2H_4 . The amount of this gas evolved from decaying plants submerged in water, and the immense quantities of it condensed in coal beds and other rocky strata, (forming fire damp,) show the great extent to which this mode of decomposition prevails.

In nature these various modes of decomposition often go on together, or intervene at different stages in the decomposition of the same mass; they are, besides, seldom so complete as we have rep-

resented them. The first process results in the formation of vegetable mould, which always retains portions of carbon and hydrogen; while the incomplete operation of the processes II, III, and IV, gives rise to peat, lignite, brown coal, bituminous coal, and pyroschists, in all of which the proportion of the oxygen is much less than the hydrogen, so that their composition may be approximately represented by mixtures of hydrocarbons with vegetable fibre. The following results have been selected from a great number of analyses by various chemists, and are for the most part taken from Bischof's *Chemical Geology*, (vol. I, cap. XV.) The nitrogen which, in most cases, was included with the oxygen in the analysis, has been disregarded, and the oxygen and hydrogen, for the sake of comparison, have been calculated for twenty-four equivalents of carbon.

1. Vegetable fibre or cellulose	$C_{24}H_{20}O_{20}$
2. Wood, mean composition	$C_{24}H_{18.4}O_{16.4}$
3. Peat, (Vaux)	$C_{24}H_{14.4}O_{10}$
4. Peat, (Regnault)	$C_{24}H_{14.4}O_{9.6}$
5. Brown coal, (Schrötter)	$C_{24}H_{14.3}O_{10.6}$
6. Brown coal, (Woskresensky)	$C_{24}H_{13}O_{7.6}$
7. Lignite, (Vaux)	$C_{24}H_{11.3}O_{6.4}$
8. Lignite, passing into mineral resin, (Regnault)	$C_{24}H_{15}O_{3.3}$
9. Bituminous coal, (Regnault)	$C_{24}H_{10}O_{3.3}$
10. Bituminous coal, (Regnault)	$C_{24}H_{10}O_{1.7}$
11. Bituminous coal, (Regnault)	$C_{24}H_{8.4}O_{1.2}$
12. Bituminous coal, (Regnault)	$C_{24}H_8O_{0.9}$
13. Bituminous coal, (Kühnert and Gräger)	$C_{24}H_{7.4}O_{1.3}$
14. Bituminous coal, mean composition, (Johnston)	$C_{24}H_9O_2-O_4$
15. Albert coal, (Wetherell)	$C_{24}H_{15.9}O_{1.6}$
16. Asphalt, Auvergne	$C_{24}H_{17.7}O_{2.2}$
17. Asphalt, Naples	$C_{24}H_{14.6}O_2$
18. Asphalt, Bastennes	$C_{24}H_{16}O_{0.7}$
19. Elastic bitumen, Derbyshire, (Johnston)	$C_{24}H_{22}O_{0.3}$
20. Bitumen of Idria	$C_{24}H_8$
21. Petroleum and naphtha	$C_{24}H_{24}$

In the above table we see the transition from peat and brown coal to lignite, and thence to bituminous coal. Professor Johnston, from his experiments in various coals, including cannel from Wigan, splint coal from Workington, and caking coal from Newcastle, deduced the composition given in 14, in which with $C_{24}H_9$ the oxygen varies from two to four equivalents. It will be seen from a comparison of the infusible Albert coal with the bitumens 16, 17, and 18, how gradual is the transition to the true petroleum and naphthas, from which oxygen is absent. The asphalts also, as will be observed, differ very much in their composition, and though generally much richer in hydrogen than the bituminous coals, the variety from Naples (17,) which is completely fusible at 140° C., contains less hydrogen and more oxygen than the Albert coal analyzed by Wetherell; while the idria-line or bitumen found with the mercury ores of Idria approaches very nearly in composition to the bituminous coals 11, 12, and 13, with which many asphalts may be said to be isomeric. It is, however, probable that those oxygenized bitumens, unlike the coals, are products

of the oxydation of naphtha or petroleum by a process similar to that by which resins are derived from vegetable hydrocarbons. These formulas must be taken as representing not the true equivalents, but only the proportions of the elements in the bodies in question, which are in most cases mixtures of various substances. This is especially true of naphtha, which may be taken as the representative of pure unoxydized petroleum, and which is separated by distillation into oils of very different boiling points. The late analyses by Uelsmann of the rectified rock oil from Sehnde near Hanover, gave the formula $C_{18}H_{20}$, and according to De la Rue and Müller, the greater part of the Rangoon petroleum consists of hydrocarbons in which the number of equivalents of hydrogen is a little greater than the carbon; one gave $C_{26}H_{28}$. Associated with these are, however, portions of bodies containing a less proportion of hydrogen, so that we may conceive the mean composition of petroleum to be represented, as in the preceding table, by equal equivalents of hydrogen and carbon; many forms of solid bitumen also, as ozokerite and hatchetine, have the same general composition.

By referring to what has been said above it will be seen that the final result of the third process of decomposition of woody fibre, in which the air being excluded, the oxygen is shared between the carbon and hydrogen, would be $C_{20}H_8$. A similar result would be obtained with the simultaneous evolution of marsh gas, if we suppose $6 CO_2 + 8 HO + 3 CH_2$ to be removed from an equivalent of woody fibre, leaving $C_{15}H_6 = C_{20}H_8 = C_{24}H_{9.5}$, which approaches the composition of most bituminous coals and of idrialine. A further elimination of marsh gas would leave a residue of pure carbon, and thus, as Bischof has suggested, vegetable matters may be converted into anthracite without the intervention of a high temperature.

The elimination of the whole of the oxygen in the form of carbonic acid would leave a compound with a large excess of hydrogen, of which it would be necessary to remove a portion in the form of water or marsh gas in order to reduce the residue to the composition of petroleum. We know of no combination of carbon and hydrogen in which the number of atoms of hydrogen surpasses by more than two those of hydrogen, the general formula being C_nH_{n+2} , so that oils like $C_{18}H_{20}$ and $C_{26}H_{28}$ contain nearly the maximum quantity of hydrogen, and a body like $C_{14}H_{20}$, whose formation we have supposed above, could not exist, but must break up into marsh gas and some less hydrogenous oil like petroleum.

We do not know the precise conditions which in certain strata favor the production of petroleum rather than of lignite or coal, but in the fermentation of sugar, to which we may compare the transformations of woody fibre, we find that under different conditions it may yield either alcohol and carbonic acid, or butyric and carbonic acids with hydrogen, and even in certain modified fermentations the acetic, lactic, and propionic acids, and the higher alcohols, like $C_{10}H_{12}O_2$. These analogies furnish suggestions which may lead to a satisfactory explanation of the peculiar transformation by which, in certain sedimentary strata, organic matters have been converted into bitumen.

EXPLOSIBILITY OF COAL OILS.

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So recent has been the introduction of coal oil into general use for burning in lamps, that few persons have as yet had satisfactory opportunities of obtaining a knowledge either of its peculiar properties or of the peculiar processes lately invented for extracting oil from coal in quantities sufficient to constitute a new and important article of commerce.

Some of the qualities of coal oil sold in the market having proved dangerously explosive, the directors of fire insurance companies have become alarmed, and have increased the rates of fire insurance on property where such oil is stored or burnt in lamps, deeming it to be extra hazardous, like camphene and "burning fluid." But a manifest difference being discoverable in the inflammability of the oils supplied from different establishments, it is evident that some mode of distinguishing the safe from the unsafe oils has finally become indispensable for the security of the insurers as well as for the satisfaction of the insured. Accordingly, in compliance with a request of the board of directors of the Rhode Island Mutual Fire Insurance Company, the following investigations have been made to determine, by practical experiments, the comparative explosibility of coal oils, and the consequent probable danger of the use of them in lamps for lighting manufactories and dwellings.

Several of the experiments may appear to be very simple; but as they serve to exhibit instructive facts for popular information, they are none the less valuable for dispelling unfounded fears of danger, and for inducing due caution where there may exist causes for alarm.

All the liquid products of the distillation of coal are popularly considered as "coal oils;" but there is an extraordinary difference in their volatility and inflammability, from the explosive flash of volatile spirits, resembling ether and alcohol, to the dull heavy blaze of a smoking tar. The several peculiar qualities of the products of the distillation of bituminous coal will be most readily learned from a description of the processes practically adopted by the distillers for obtaining them.

The process of making common coal gas by the distillation of bituminous coal in red-hot iron retorts or ovens, set over furnaces, is well known; but it may not be generally known that before the iron retorts become heated red-hot, a tarry liquid or oil first comes over into the main gas-pipes, and is collected in a separate cistern. This dark liquid has an exceedingly strong and disagreeable odor, and the only use of it at first was that of making coal tar. A nearly similar

tarry oil had previously been discovered in ancient times, flowing naturally out of crevices of rocks on the surface of the earth like springs of water. This peculiar tarry oil received the name of "petroleum," from the original Greek words signifying "rock oil," as being descriptive of the source from whence this extraordinary liquid was first obtained.

The natural petroleum so nearly resembles the artificial tarry oil obtained by the distillation of bituminous coal, as above described, that the same name will be applied to designate both of these products, as being alike the results of the distillation of the same material. The question is often asked, Whence is this petroleum produced?

The region of our country where the oil-springs are found gushing forth on the surface of the earth is near the frontier line dividing the anthracite coal-fields of the seaboard of the United States and the bituminous coal-fields of the great valley of the Mississippi. In this intermediate region are vast beds of bituminous coal, originally composed of the woody fibres of peat and other vegetable bodies, organized by the action of sunshine on the surface of the earth, and then covered over securely from accidental combustion. The coal is, however, exposed to a heat in the depths of the earth, which is increased regularly 1° from 50 to 70 feet of descent, the temperature at 200 feet depth having been found to be 85° in an English coal mine. The decomposition of the coal at great depths is constantly going on, and the coal gas is often heard in the galleries of coal mines rushing in hissing streams through crevices, and forming the explosive "fire-damp," which renders the safety-lamp of Sir Humphrey Davy a blessing for the preservation of the miners.

One of the deserted coal mines near Newcastle, having a 4-inch pipe connected with its chambers, has continued to distil sufficient coal gas to form a jet of flame from its open aperture on the surface of the ground "nearly sufficient to light a small town," as a recent writer has stated. From the end of a similar pipe, inserted in a drill-hole in the rocky strata on the banks of the Kanawha river, in Western Virginia, perforated to the depth of about 1,000 feet to obtain salt water, sufficient coal gas to light a city has continued for several years to rush forth, commingled with the salt water. The gas is used as fuel to boil the salt water for the production of salt. In a furnace beneath a salt pan, 100 feet long and five feet in width, the writer beheld the flame of burning coal gas, sweeping throughout in one continuous sheet, waving and flashing in wreaths of resplendent brilliancy, whilst at the same time a steam-engine was operated briskly by the same natural flow from the earth into an adjacent furnace beneath a steam-boiler. Sufficient coal gas was here discharged to evaporate the brine for making about 400 bushels of salt per day. Happening to arrive at a spot where another similar drill-hole had just been completed, an equal volume of coal gas and salt water appeared jetting upwards from the drill-hole in the rock thirty or forty feet into the air, with loud belching sounds resembling the asthmatic pantings of a powerful locomotive engine. The coal gas, here naturally elaborated, was perfectly pure and free from the disagreeable

skunky odor which characterizes the coal gas artificially elaborated in city gas-works.

The petroleum being separable by distillation from the coal at a more moderate temperature than coal gas, there is reason to believe from analogy that the same process of elaboration of petroleum goes on naturally beneath the earth as is artificially accomplished on its surface. The fact of the increased heat of the interior of the earth, in the vicinity of both the gas-springs and oil-springs in the valleys of the Alleghany mountains, is manifested in the numerous "hot springs" which gush forth unceasingly between the adjacent mountains in Western Virginia, together with numerous "sulphur springs." Indeed, this distillation of the carburetted hydrogen gas and oil from the bituminous coal, under intense pressure at great depths in the earth, constitutes a natural process of coking, whereby the flaming bituminous coal becomes gradually converted into anthracite or flameless coal.

The constantly decreasing supply of whale oil, and correspondingly increasing price of it, has recently stimulated industrial enterprise to seek out other sources of supply of this necessary article. The long-neglected oil-springs freely offered in tiny streams naturally flowing from the earth, have at last attracted attention. Impatient, however, of the stinted supply thus freely offered without labor, even some of the same resolute men who have pursued the whales among the icebergs of the polar seas and to the remotest waters of the globe, have laid down their harpoons and taken up steel drills to tap the very fountains of coal oil, in the hidden depths of the earth, in the western valleys of Pennsylvania.

The results of some of the attempts to obtain a more abundant supply of coal oil, or petroleum, have proved so successful as to appear marvellous and incredible. From one of these recent drill-holes, termed "oil wells," the petroleum gushed up with such violent force as to discharge the stream high in the air, and the flow continued so abundant that it reached the furnace of the steam-engine used for working the drill-rods. Becoming thus kindled, a vast flame lighted up the surrounding country at night. Before the conflagration could be extinguished many hundreds of barrels of petroleum flowed in a blazing flood into the adjacent rivers. In another instance, the reservoirs of petroleum being tapped by the drills earlier than anticipated and before a supply of empty casks was provided, the gushing stream was turned into a ravine and there collected by a dam to preserve it for use. Over considerable extents of valleys an abundance of petroleum has been thus obtained from reservoirs, in which it has been gradually accumulating from the natural process of distillation of bituminous coals in the depths of the earth. The ample supply of petroleum available from these sources has quite recently reduced the price of it to about fifty cents per barrel, and has nearly superseded recourse to the artificial distillation of bituminous coal. This unexpected gift to the children of men may well excite their wonder and their admiration of the provident care in anticipating human wants thus manifested by a bountiful Creator.

Both the artificial and natural petroleum in the crude state of a tarry oil are found unfit to be burnt in lamps. After numerous attempts to refine the crude petroleum by a second process of distillation, three remarkably different products were separately obtained. Each one of these three substances having a different evaporative or boiling point, like water and alcohol, they are readily separable during one continued process of distillation, by gradually increasing the heat beneath the still.

The first product that comes over from the condenser is the volatile spirits resembling ether and alcohol, called naphtha, benzole, benzine, &c., which boil at a lower temperature than alcohol, (about 150° to 160° Fahrenheit's scale.) Naphtha evaporates as rapidly as ether, producing similar lethean effects on breathing the vapor, and even exceeds ether and alcohol in inflammability.

It appears to be the common practice of the distillers of petroleum, or coal tar, to keep the heat beneath the stills very low until this naphtha has time to become evaporated at its boiling point of 160° , and to flow from the condenser in a crystalline stream into a cistern arranged to receive it. When, by the test of a hydrometer, its specific gravity is found to become increased to a certain degree by containing some of the heavier coal oil, the stream from the condenser is diverted into another cistern designed for receiving the second product of the distillation, being a heavier coal oil, commonly known as "kerosene."

The exact point where the naphtha becomes exhausted and the kerosene begins to flow is a nice question to be decided upon by the distiller. The extreme inflammability of the naphtha renders it unsafe for burning in lamps; and it cannot be advantageously reduced to vapor to be mixed with coal gas, because it does not form a permanent gas; for the vapor, like that of alcohol, becomes condensed to a liquid whenever it is cooled, as occurs on its passage through cold iron gas-pipes under ground. The only available use of naphtha is for dissolving India-rubber, and for mixing with painters' oil as a substitute for spirits of turpentine. For these reasons naphtha is nearly worthless for sale in the market; and as it constitutes ten or fifteen per cent. of the petroleum used for distillation, there is a strong temptation to the distillers to divert the current of naphtha into the kerosene oil-cistern to gratify the cupidity of purchasers by thus affording the oil at a low price. Thus both sellers and buyers are alike tempted to disregard the danger resulting from mixing the naphtha with the kerosene oil.

To gratify purchasers of coal oil by an extraordinary low price, it has been stated that dealers have contracted for the waste naphtha and residuary heavy coal oil or tar for preparing a mixture of about the same specific gravity as kerosene oil, and resembling it in appearance. The hydrometer is not, therefore, available for detecting this spurious article, and there remains no other mode of ascertaining its dangerous character than by actually testing its inflammability experimentally by the degree of heat indicated by a thermometer, at which it will become kindled by the application of a lighted match,

and begin to exhibit a lambent flame flickering over its surface, as over that of blazing alcohol. If the sample of oil contains much naphtha, it will be found capable of emitting sufficient gaseous vapor to take fire at the ordinary temperature of the air on plunging a burning match in a cup of the oil. Other samples will require to be heated to 90° , and even to 160° , before they can be similarly kindled. There is all this difference in the inflammability of the article sold in the market for coal oil. Judging of all the qualities of coal oils by some few cases of the explosive inflammability of the lowest grade in the market, they have all been subjected alike to doubts and suspicions. As the coal oils offered for sale by establishments of known respectability are really most valuable and economical substitutes for whale oil for purposes of illumination, it is unwise, as well as unprofitable, to embrace them all in one sweeping clause of condemnation without experimental examinations to determine the facts in relation to this novel subject of inquiry.

The presence of naphtha in kerosene oil essentially contributes to the brilliancy of the light for illumination, whilst at the same time it improves the combustibility of the oil by a less tendency to emit smoke. It is, therefore, for the interest of the consumer of coal oil to retain as much of this light volatile spirits as can be safely used; for it really seems like throwing away bread to reject so valuable an element of human comfort and enjoyment available as a source of light and warmth. The present waste of this material, which is now suffered to take place from fear of its wonderful combustibility, will probably be obviated ere long by new artificial chemical combinations, as ether has been reduced to alcohol and wood sawdust to a kind of sugar, so that its violent explosive tendency may be thus subdued to a more safe and manageable condition for general use in lamps.

It has, therefore, now become an exceedingly important and interesting question for insurers as well as for the insured, having property exposed to risks of fire from burning kerosene oil in lamps, to investigate carefully and judiciously the real extent of the danger and hazards resulting from this use of it for illumination, so as not needlessly to restrict the general enjoyment of this economical and valuable substitute for whale oil, and even coal gas. This investigation has become the more important as the source of supply of coal oil appears to be limited only by the supply of the vast beds of bituminous coal stored up in reserve in the depths of the earth for future generations of mankind.

To ascertain the comparative qualities of the kerosene oil made in different parts of this country, samples were procured and tested by the simple process of pouring some of each kind of oil into a cup by itself, and by placing them all afloat together in a basin of water heated by a spirit lamp, and with a thermometer immersed in the water to indicate the temperature while gradually rising from 60° to 212° . During the progress of the increase of temperature, blazing matches were passed over the surface of the oil in each cup successively at short intervals of time, until the increased heat caused sufficient gaseous vapors to arise from each to take fire; which they all

finally did, at degrees of temperature varying from 80° to 162° , exhibiting faint flames quivering over the surface of the oil, precisely like those hovering over the surface of spirits of wine or alcohol when similarly kindled. The flames were quite as readily extinguished by a blast of the breath, and not the least symptom of any explosive character became manifest when each one took fire. Until the evaporative point of each sample of oil was produced by the increase of heat applied, and until lambent flames were kindled, burning matches were extinguished when plunged into the coal oil, as effectually as if they had been similarly plunged into water. The average heat at which all the samples emitted sufficient vapor to admit of being kindled was about 125° of Fahrenheit's scale.

After ascertaining the temperature requisite to kindle the several samples of coal oil, it next becomes an interesting subject of investigation to ascertain the heat to which coal oil is ordinarily elevated whilst burning in lamps. The results of actual experiments showed that in glass lamps the temperature is increased about 6° , and in metallic lamps but 10° or 12° , above that of the apartment; which, being 67° , produced a heat in the oil of about 71° to 79° , leaving a considerable range of temperature below the average of 125° , above stated.

Finding by actual observation that only the gaseous vapors arising from the heated oil exhibit the phenomenon of flame whilst ascending, and combining chemically with the oxygen of the air, it became manifest that no explosive action could be anticipated to take place from any kind of oil or inflammable spirits, unless these gaseous vapors were first evolved by a previous increase of temperature, and then brought into contact with the atmospheric air before applying a match thereto. There being no room left for either the gaseous vapor of the oil or for atmospheric air to combine therewith, in the chamber of any lamp entirely filled with oil, every attempt to produce explosive action with a full lamp, at all temperatures up to the boiling point of water, utterly failed when lighted matches were applied to the open orifice of the lamp. The only result produced by increasing the heat of the coal oil was an increase of the evaporation of the gas, and a higher jet of flame steadily rising, as from the jet of a gas-burner. So long as lamps are kept full of oil, or even of explosive camphene and "burning fluid," there can be no explosive action whatever. For this special reason it may be adopted as a safe rule to cause all lamps containing highly inflammable liquids to be kept as full as practicable by being daily replenished.

As nearly all the published accounts of the explosions of camphene lamps, and of the consequent dangerous and frequently fatal consequences that have ensued, represent the occurrences to take place during the process of filling them whilst empty, the chamber of the lamp or of the feeder being then occupied by gaseous vapor commingled with atmospheric air, an experiment was made with a glass factory lamp under similar circumstances, as being favorable for exhibiting the most violent explosive action producible by means of coal oil. Accordingly a lighted match was plunged into the orifice of

a burning lamp containing a little kerosene oil of the ordinary temperature, without producing any perceptible explosive effect. In this state it was also filled safely. To test the effect of increasing the heat of the coal oil higher than 80° , the lamp, whilst still burning, was placed in a basin of water, the temperature of which was gradually raised to the boiling point. During the progressive increase of temperature burning matches were continually inserted into the orifice of the lamp without perceptible effect in kindling vapor, until the heat became increased to nearly the temperature at which the oil had been found susceptible of being kindled in an open cup. The only mode of producing a slight explosive puff on inserting a burning match was by violently shaking the lamp to increase the evaporation and mix the gaseous vapor more thoroughly with the atmospheric air. But when the temperature of the coal oil became further increased to about 160° , the rising gaseous vapor entirely filled the chamber of the lamp and expelled the atmospheric air so completely as to cause lighted matches to be extinguished within the chamber, whilst the ascending gas continued to blaze with a slight flame above the open orifice. Indeed, with the sample of oil which did not emit sufficient gaseous vapor to become kindled at a temperature below 125° , it required dexterous manipulation to so apportion the gaseous vapor and the atmospheric air as to exhibit the faintest action of an explosive character.

Continuing the experiment with the kerosene at a still higher temperature than 212° , by pouring it into an iron ladle over a hot fire, the gaseous vapor arose therefrom still more rapidly, until it became a visible smoke ascending regularly in a column from the ladle even whilst heated red-hot, without becoming kindled into flame until a lighted taper was brought into contact with it; then the gaseous vapors became resolved into a bright column of steady flame without any evidence of an explosive tendency.

Whale oil, tallow, rosin, and pine sawdust were similarly exposed in the same heated ladle with precisely similar results, showing that the kerosene was no more explosive than either of these substances, and that they all alike became decomposed at a high temperature into their constituent elements of carbon and hydrogen, or carburetted hydrogen gas. One measure of this inflammable gas is found to form a new chemical combination with about three measures of atmospheric air when kindled, and to exhibit the phenomenon of an elongated flame whilst the combination is taking place between the ascending particles of the surface of the gas and the particles of air in immediate contact therewith. This result is manifested in the form of the flame of a lamp or gas-burner. But if one measure of carburetted hydrogen be thoroughly mixed with four or five of atmospheric air, so that the particles be all brought into intimate contact with each other, then the combination takes place simultaneously throughout, producing the sudden and violent expansive action denominated an "explosion." In order, therefore, to produce an explosion of a lamp or of any other vessel, it is only necessary to mix the gases of de-

composed oil, coal, or wood with this combining portion of atmospheric air, and then to apply a lighted match to the mixture.

Dangerous explosions are thus often produced in common stoves on suddenly decomposing the wood, shavings, or paper used therein for kindling, by throwing red hot coals upon them. The carburetted hydrogen, rising in the form of a dense smoke, becomes commingled with the atmospheric air occupying the chamber of the stove, and on being kindled the whole simultaneously flashes into flame. In "air-tight stoves" these explosions have often proved destructively violent to persons and property.

Thus there may ensue dangerous explosions even in lighting a fire in a stove; and most fearful explosions have often taken place in apartments of dwelling houses when about one-fifth part of the space therein becomes occupied by coal gas escaping from leakages of gas-pipes. The difference in the extent of the violence in such cases is simply due to the greatly increased quantity of the explosive gas accumulated in large rooms, as compared with the diminutive chambers of common lamps. The extent of the danger to both life and property is thus correspondingly magnified. Even adjacent buildings have thus been damaged and many lives destroyed by such explosions of coal gas.

There is, therefore, the same danger of explosions in the use of coal gas in houses as in the use of coal oil in lamps where ordinary care and caution are not exercised. Were about five parts of atmospheric air mixed in a city gas-works with one part of the coal gas, and thus distributed for use, the jet of gas kindled at a burner would communicate the flame to the interior of all the main pipes and gas-holders, and a general simultaneous explosion of all would ensue. The same parallel has been applied to excluding atmospheric air from the chambers of kerosene oil lamps by keeping them filled with oil.

To compare practically the violence of the explosion of common coal gas with that of the inflammable kerosene coal gas and of naphtha, a small tin vessel of the capacity of a factory lamp was made for the experiments; the results of which showed that the coal gas was the most readily explosible, the extent of the explosion, however, being only a slight puff from the orifice of the tin vessel.

The slightness of all the explosions in the experiments that have been recapitulated is ascribable to the small proportion of one-fifth pure oxygen gas contained in the atmospheric air, the remaining four-fifths being composed of incombustible nitrogen. Were pure oxygen substituted for the diluted atmospheric air, the explosions would have been dangerously violent. Indeed, were the atmosphere composed of pure oxygen, the iron grate bars of a furnace would burn more brilliantly than the most combustible fuel placed thereon, and explosions and conflagrations would continually occur with irresistible violence. It is owing to the presence of the pure oxygen gas evolved by heating saltpetre, and commingled with the carburetted hydrogen gas evolved from the ignited pine floors and partitions of warehouses, that the most frightful explosions have occurred, which have often blown up great warehouses and destroyed many lives. This fact

appears to have been lost sight of in the numerous discussions of the questions of "the explosibility of saltpetre," which have been published, and in the experiments that have been made to solve practically this unsettled question. These experiments have shown that where fragments of charcoal not finely pulverized, such as are produced from burning wood, and from cloth commonly used for bagging, are thrown upon heated saltpetre, a prolonged vivid combustion has ensued, termed *deflagration*, in contradistinction to *explosion*, the contact of the two substances being confined to the surfaces of the solid masses. To produce explosive action with saltpetre and charcoal when ignited, it has therefore been found necessary to pulverize both substances very finely and then to commingle them, atom to atom, artificially, with the utmost care, as is practically accomplished in the manufacture of gunpowder. When thus prepared, the saltpetre sets free sufficient pure oxygen to be chemically combined, atom to atom, with the charcoal or carbon in the confined chamber of a cannon, independently of a supply of the oxygen gas from the external atmospheric air. In this way only is an explosion directly producible by saltpetre. But indirectly, as occurs in a burning warehouse, a still more violent explosion than that of gunpowder is producible by simply mixing together the gaseous products of saltpetre and burning wood, as the following experiment, made in the laboratory of Brown University, with the co-operation of Professor Hill, will forcibly demonstrate.

Some saltpetre was put into a retort, and subjected to the heat of a furnace, to represent the action of the intense heat of a burning warehouse on saltpetre stowed therein. The gas evolved from the saltpetre was collected in a glass receiver. Some fine sawdust was put into another retort, similarly heated in a furnace, and the rising carburetted hydrogen gas was collected in another receiver inverted over water. The two gaseous products were commingled in the proper combining proportions, and introduced into a small tin tubular chamber, with a cover loosely fitted on its top, and a small hole pierced in its side, to which a lighted match was applied. An explosion ensued so violent and rapid that the top of the circular cover was burst off from its soldered edge before it was lifted up, and the hoop of it split open and thrown to a distance with a deafening report.

After witnessing the violent and stunning explosion thus produced by a minute quantity of the mixed gases of pine wood and saltpetre, the professor remarked that a room full of such an explosive mixture might produce the terrific effect of the explosion of a magazine of gunpowder.

The dense smoke of burning floors, constituted of carburetted hydrogen, and the pure oxygen evolved by the heat of them from the saltpetre, might ascend into some adjacent room and remain commingled there, ready to explode by the first flash of flame which might reach them there.

The explosiveness in this case manifestly originates from the chemical combinations of the oxygen gas, set free by heating the saltpetre, with the carburetted hydrogen gas, set free by the heating of the

pine wood, and not from any explosive property in the saltpetre itself. For this special reason saltpetre stored by itself, without the proximity of wooden floors beneath it, should not be considered in the class of a hazardous risk for fire insurance, or intrinsically dangerous.

As the dangerous inflammability of coal oil appeared to be ascribable to the naphtha not separated therefrom, the following experiments were made to ascertain the extent of the inflammable properties of pure naphtha.

Finding that the liquid naphtha evolved sufficient vapors at the ordinary temperature of the atmosphere to become instantaneously kindled into flashing flames, the cup containing it was immersed in a freezing mixture of snow and salt to reduce the temperature to the zero of Fahrenheit's scale. At this low temperature the naphtha appeared to blaze with equal violence. Then a quantity of snow was mixed with the liquid naphtha and thoroughly stirred, for still further reducing the temperature. Even at this extreme degree of cold the naphtha continued to flame so furiously that it was necessarily thrown from the cup, upon the ice covering the ground where the experiment was made, in the open air, whilst the thermometer indicated an atmospheric temperature of 19° below the freezing point. The naphtha still continuing to burn upon the surface of the ice, a covering of snow was thrown over it to extinguish the flame. Through this covering of white snow the bright flames still continued to shoot up, presenting to view the extraordinary spectacle of burning snow.

On repeating similar experiments on the comparative combustibility of spirits of wine or alcohol, camphene, and burning fluid, they did not emit sufficient gaseous vapors at the freezing point, or 32° , to become kindled into flame, when burning matches were plunged therein, but with a little increase of temperature they all became kindled.

The preceding experiments seem to exhibit impressively the extraordinary inflammability of naphtha, arising from the facility with which it emits gaseous vapors. Susceptible of being readily kindled into flames, even through a mantle of snow, naphtha, like ether, emits gaseous vapor, which, with surprising facility, pervades the air; and the odor of it being rather pleasant than offensive, like that of artificial coal gas, the utmost caution is requisite to prevent not only unexpected explosions; but also the almost unextinguishable violence of its conflagration, for practically the application of water does not subdue the conflagration of naphtha in quantity, and only the exclusion of atmospheric air appears to quench the fury of its flames. To prevent the escape of the gas through the porous wooden staves, it has been found necessary to coat the inside of the barrels with a solution of glue.

The insidious nature of the gaseous vapor of naphtha is therefore its most dangerous quality, for when stored in barrels in a warehouse, with the bung holes of the barrels open, sufficient vapor escapes into the air of a close apartment to produce a violent explosive action on introducing a lighted candle. In this way, notwithstanding the precautions used at the distilleries of coal oils, several of them have been

first shattered by explosions of the naphtha vapor and then burned down.

Petroleum contains a considerable percentage of naphtha, and consequently partakes in a degree of its dangerous properties. There appears to be sufficient reason for classing these liquids as specially hazardous.

In making experiments with the tin vessel of the capacity of a common lamp, (before described,) a single drop of naphtha was found to yield sufficient vapor to produce as much explosive action as could be produced by the most inflammable coal oil for sale in the market, when similarly experimented with ; and after every experiment failed to exhibit the slightest explosive tendency of the best kerosene oil, a single drop mingled therewith rarely failed to yield sufficient vapor to manifest its presence by a slight explosive puff when kindled by a lighted match. The combustion in this case was confined to the minute quantity of naphtha gas, without either kindling the kerosene oil, or dangerous results.

In all the accounts of the explosions of camphene and burning-fluid lamps there appears to be no statements of any damage or injury to life or property by the mere mechanical force developed. The principal disastrous results are caused by the scattering about of highly inflammable liquids, which instantaneously spread the conflagration over surrounding combustible substances. It is sufficient to produce the most disastrous consequences, if a lamp containing any of these highly inflammable liquids produce only a sufficient gust of an explosive character to disperse the blazing contents over the dresses of adjacent persons or surrounding combustible matter. The rapid communication of the flames has in this way often proved fatal to life and destructive to buildings. For this reason the rates of premium for fire insurance have been enhanced on property jeopardized by the use of camphene and burning fluid in lamps for lighting factory buildings. As the accidental fall and breakage of camphene or burning-fluid lamps on a floor have often produced the loss of life and property by communicating fire, as above stated, an experiment was made to test the comparative results which might be anticipated from a similar accident to a burning lamp containing coal oil, which required to be heated to 125° before it emitted sufficient gaseous vapor to be kindled by a lighted match. Some coal oil of this quality was poured out of a burning lamp upon a floor and the blazing wick dropped therein. There it continued burning until the heat of it raised the temperature of the surrounding coal oil to 125° , when the blaze began gradually to spread over the surface of the oil on the floor in an enlarging circle, but no sudden flash of flame spread over the whole surface at once, as was the case when burning-fluid and camphene were similarly experimented upon.

To represent the effect of accidentally spilling the kerosene oil from a burning lamp upon a cotton dress, a piece of calico cloth was moistened with the oil, and then held up in contact with the flame of a lamp. The kerosene required a little time for its temperature to become raised to the evaporative point of 125° , before the blaze

began to spread over the surface of the calico, and it was readily extinguishable by the breath when first kindled. Although a single calico dress may of itself be deemed dangerously inflammable, yet it requires more time to become ignited whilst wet with kerosene oil, but the intensity of the flame becomes finally much greater.

When a similar experiment was repeated on cotton cloth moistened with burning fluid, camphene, and spirits of wine, the blaze spread instantaneously over the surface of the cloth with terrific violence, affording ample reason for the belief of an increased hazard in using them in lamps even for household illumination; and yet how few are the disastrous accidents which have occurred from this cause, in comparison of the vast number of cases where lamps supplied with these inflammable liquids have been harmlessly used with ordinary care.

An important incidental security, resulting from the use of kerosene in lamps, is an exemption from the crusts of coal which are found to collect on the wicks where whale oil is burnt, and which not only obscure the radiance of light, but frequently sparkle off upon adjacent combustible bodies. It is necessary often to trim the wicks of whale-oil lamps, which in manufactories is frequently done by workmen, impatient at the waning glimmer. The burning crusts of the wick, knocked off without regard to surrounding combustible matter in cotton mills, has often set them on fire and burned them. Turpentine is also used for lighting the wicks of such lamps, which increases the danger in cotton mills. For these reasons it is believed that the comparative hazard from fire by the use of whale oil in lamps in cotton mills is greater than where coal oil is similarly used, of the quality before stated.

Although pure sperm oil may be free from the preceding objection, yet, so great is the temptation of a profit of about one dollar per gallon from mixing the cheaper whale oil with sperm oil, that it has become nearly impracticable to obtain a sufficient supply of the latter, even for oiling machinery. So great, indeed, has been found the difficulty of procuring pure sperm oil in England for this purpose, that the heavier coal oil has been there successfully substituted in place of it for this special purpose.

Ample capital and skill have recently been applied to the new branch of business of the distillation of coal oils, and no deficiency of an abundant future supply will hereafter occur for purposes of illumination, or, when properly prepared, for lubrication of machinery. It appears that an entire cargo of coal oil has recently been exported to Italy. The supply of coal oil will not fail until the supply of coal in the depths of the earth becomes exhausted. How long this may continue has already become a curious subject of calculation.

The consumption of coal for purposes of navigation, and for motor power in the useful arts, is manifestly destined to go on, increasing with an increasing population to a vast extent, whilst no compensating supply is accumulating in new deposits or formations of fresh beds of coal to replenish the decreasing stock. In anticipation of the

exhaustion of the coal mines of England, the question of restricting the exportation of coal has been debated in Parliament, and a recent writer has published in the London Quarterly Review an estimate, limiting the supply to a period of about one thousand years, and then, he observes, "recourse must be had to the vastly more extensive coal fields of North America." In a sort of geological inventory of the stock of coal on hand in the possession of some of the principal nations of the earth, it appears that there are about 135,000 square miles of area of coal fields in the United States, 18,000 square miles in British North America, 12,000 in Great Britain, 3,500 in Spain, and only 1,700 in France. The possession of abundant supplies of coal and iron by races of men having the intelligence and vigor to use them effectively, constitutes, at the present day, the basis of natural greatness, as exhibited in the effects of the annual production of seventy millions of tons of coal by Great Britain for the developments of manufactures, commerce, and the physical comforts of the people.

These facts impart to the present subject of inquiry exceedingly interesting as well as instructive considerations connected with the probable future supremacy in the useful arts and national power of the people of different countries of this earth. The coal fields of this western continent have only recently begun to yield up their hidden treasures of mineral coal and petroleum. Our country is still literally "the new world." Provided with a tenfold greater supply of coal and iron than Great Britain, and with far more than all the rest of the continent of Europe besides, this physical power is destined to be developed with a paramount influence on the affairs of men in remote ages of futurity, after the present wilderness of North America shall have been made "to blossom as the rose." Inspired with glowing anticipations of the future destiny of America, resulting from the possession of vast regions of fertile land and mineral treasures hidden beneath its surface, Bishop Berkely inscribed his prophetic verse—

"Westward the course of empire takes its way."

The preceding experimental facts have been investigated for the special purpose of showing that all these bountiful provisions, stored up for the future well being of man on earth, may be safely used with due care and forethought, without which even a draught of cold water might prove a fatal beverage. The minuter details have also been added, to dispel unfounded apprehensions of danger in the use of coal oils properly distilled at establishments of known credit and respectability, and to awaken caution where there is real cause for alarm, that these gifts of a bountiful Creator may be rendered subservient to human enjoyment and happiness.

DESTRUCTIVE EFFECT OF IRON-RUST.

TRANSLATED FROM THE GERMAN JOURNAL "AUS DER NATUR," VOL. 13, PAGE 153.

It has been frequently observed that in timber of old ships wherever iron nails or bolts have been driven the wood in their proximity is entirely altered. All around, to a distance of an inch and more, and parallel to the direction of the woody fibres, as far as the iron has entered, a part of the material is dissolved away, leaving the remainder half charred, as it were, and quite brittle, so that it may be easily broken into pieces, the fibres having entirely lost their cohesion. Thus, the wood around the nails has the appearance as if these nails were driven in when red hot. This injurious effect of the iron-rust may be considered as one of the principal causes of the want of durability of our ships.

Rust not only originates in places alternately wet with sea-water and again exposed to the air, but also where the iron is permanently submerged under water, for this also contains the elements for the production of rust, namely: carbonic acid and oxygen. Rust, as is generally known, is an oxide of iron, and as soon as it comes into contact with wood it gives off part of its oxygen and becomes reduced to protoxide. The latter takes up a new portion of oxygen and transfers it again to the wood, and by the uninterrupted repetition of this process a slow oxydation or decay of the wood is effected. Thus the protoxide of iron in this case plays a part similar to that of the nitric oxide in the manufacture of sulphuric acid, with the only difference that the transfer of oxygen in the one case is of essential benefit to arts, and in the other, decidedly injurious.

In order to demonstrate the fact that oxide of iron is reduced by the mere contact with organic substances not yet in a state of putrefaction, Kuhlmann, in Lille, has instituted different experiments, the results of which confirm the correctness of this assertion. When hydrated oxide of iron was shaken with cold solutions of several coloring matters such as log-wood, Brazil-wood, cochineal, curcuma, mahogany, but not indigo and litmus, they became decolorized, lac dyes having been formed. In these the iron was found in the state of protoxide, and consequently the oxide of iron had lost a portion of its oxygen by the action of the coloring matter. Solutions of cane-sugar, grape-sugar, and gum were boiled with hydrate of oxide of iron. Of these the grape-sugar acted powerfully, reducing the oxide even when cold; this action was less with cane-sugar, and least with gum. When oil of bitter almonds was heated with dry hydrate of oxide of iron, to a temperature of 100° ,* it was altered into benzoic acid, which enters into combination with the protoxide of iron.

*Probably Celcius scale.—TRANSLATOR.

Similar cases, where oxide of iron acts destructively upon organic substances, frequently occur in everyday life. If, for example, linen or cotton cloth in which there are inkstains is repeatedly washed with lye, the texture of the stained spots becomes tender, or even falls out. Like injury is done by the *lustre*(?) colors, (rust-yellow and black-brown,) which are fastened upon the cloth by first soaking it in a solution of sulphate of protoxide of iron or protoxide of manganese, passing it when dry through lye of caustic potash, and then exposing it to the air, by which the protoxide is changed into oxide. By this process the cloth loses its durability, and the common saying is, that it is burnt in dyeing. But this diminution of the strength of the cloth is not an exception, produced by a mistake in the application of the method; it is the normal result. As an explanation of this process, it was supposed that any oxydizing substance may dispose any other with which it is in contact to combine with oxygen, even when otherwise not inclined to such combination. According to Kuhlmann, however, the oxide of iron directly transfers the oxygen to the cloth, and ceases its action only when the destruction is complete.

Several phenomena, observed in bleaching, can be explained in the same manner. If, for instance, the inner surface of the soaking tubs made of sheet-iron and used in dyeing or bleaching becomes bare by the removal of the calcareous sediment, and if the cloth comes into immediate contact with the iron, then those places to which the air has access are covered with rust, and the strength of the cloth is inevitably impaired. In bleaching the ordinary goods, which are made from refuse cotton, all the parts of the material which in the carding process have become soiled with iron are exposed to this oxydizing action, and this often to such a degree that within four or five days holes are eaten through the texture.

Kuhlmann thinks that this energetic action of the oxide of iron is an additional condition for the spontaneous combustion of refuse cotton and wool, which so often occurs. It is true the ready reception of oxygen by the oil, with which such refuse is always more or less saturated, favors the spontaneous ignition, yet the oxide of iron may frequently afford an additional cause and favor the commencement of the combustion.

The objection to the use of iron nails, which we mentioned, is of sufficient importance to induce us to look for a remedy. In order to avoid the destructive action of rust upon wood-work, copper nails must be used instead of iron ones, wherever the first cost is not an essential object. They are, however, too expensive for general use, and therefore iron nails coated with tin or zinc should be substituted.

How important inferences for agriculture may be drawn from these observations, we shall see in another article.

ARCHÆOLOGY.*

THE LACUSTRIAN CITIES OF SWITZERLAND: DISCOVERY OF A LOST POPULATION.

LACUSTRIAN HABITATIONS OF ANCIENT AND MODERN TIMES, BY M. FRED-
ERIC TROYON: LAUSANNE, 1860.

TRANSLATED FOR THE SMITHSONIAN INSTITUTION FROM THE REVUE DES DEUX MONDES: PARIS,
FEBRUARY, 1862.

OUR historians have often regretted that they were reduced to hypotheses respecting the ancient inhabitants of Gaul. Nineteen centuries have already elapsed since the expeditions of Cæsar, and it is only to-day that a ray of light falls upon the tribes once scattered over the territory which is now our country. The Roman conqueror who boasts of having exterminated a million of our ancestors on the field of battle is also the first writer who adequately describes the manners, the religion, the political constitution of the different tribes comprised under the name of Gauls; but to what origin are we to refer all those tribes—Belgians, Celts, Iberians? History, in the received sense, is almost silent in this respect, and it is to other sciences that we must have recourse if we would trace through the obscurity of centuries the migrations of our fathers and the shifting boundaries of their possessions. Inductions derived from language and from comparative anatomy assist the learned in these difficult researches, but do not suffice to give the character of evidence to the conclusions generally adopted. Conjectures are not yet transformed into indubitable facts.

If the ancient names of places disguised by long usage are of great importance for the reconstruction of the history of the Gauls, the remains of the monuments they raised are of much higher value. A few ruins studied with sagacity teach us more respecting the manners, the domestic life, and the true history of lost populations than whole dictionaries of recovered words. Even nations which have left us

* The article entitled "General Views on Archæology," by A. Morlot, of Switzerland, of which a translation was given in the last Smithsonian Report, has tended so much to awaken a new interest in the study of the remains of the ancient inhabitants of this continent that we have been induced to insert a number of other articles on the same subject in the present report.—SECRETARY S. I.

their chronology and the story of their deeds seem to live anew when we make the discovery of their habitations, of the thousand objects with which their daily life was familiar, of the very articles on which they subsisted. Has not that history of Assyria, which seemed so remote, been reanimated by means of the bas-reliefs and winged bulls of Nimroud, and is not an image of Roman society recalled through the excavations which have restored Pompeii? Unhappily, traces of the successive populations which have inhabited Gaul are rarely to be met with in places where we might especially have hoped to find them. It is not on the rich and fertile plains, nor on the banks of the great rivers, where the potent communities of Gaul were heretofore established, that we must seek the remains of the habitations of our fathers. Their destroyed cities have been succeeded by so many others richer and more populous, the soil has been so often turned over and over, ruins have been so repeatedly mingled with older ruins, that all remains of the ancient occupation have mouldered into dust; time and man have labored in concert to efface every vestige. In order to surprise the secret of those elder populations we must explore the barren tracts where habitations have been always thinly scattered, above all, the forest districts which invited the hunter, but offered no inducements to agricultural colonists when conquest had once deprived them of their primitive inhabitants. While the more historic regions of our country scarcely present any remains older than the Gallo-Roman epoch, the heaths of Brittany and the wooded vales of Poitou have preserved their *dolmens* and their ranges of *men-hirs*; the sterile downs of central France exhibit their *fosses a loups*, *marges*, or *mardelles*, which formed the under-ground story of the Gallic houses; and when we penetrate into the deep pine woods of the Landes we are surprised at the sight of the vast *clotes* hollowed in the earth and left untenanted since the day when some invasion of Celts or Basques drove away the occupants. Solitude has protected these retreats of a people which no longer exists.

The interior of the soil has preserved, in great number and still better than the forests and the wolds, evidences of the sojourn of our ancestors. Many natural and artificial caverns are rich in Gallic antiquities. Beds of alluvium, lightly deposited by flowing waters, embosom remains of human industry, and form, as it were, an immense museum, which modern explorations have as yet scarcely disturbed. Even lakes and rivers hide under their crystal or turbid expanse genuine archæological treasures consisting of all the objects abandoned by the riparian tribes. Certain researches made in Ireland had already given an idea of what might be expected from the scientific exploration of lakes, when accident threw the savans of Switzerland upon the track of the most important discoveries. Thanks to them, and especially to M. Troyon, their principal interpreter, the field of our knowledge has been singularly enlarged: a lost population has been discovered in the lacustrian basins of the Alps and the Jura. We have here no fact of simply national interest; it is the best established indication which science possesses for the ancient history of western Europe. Although the localities of these discoveries oblige the

author of the *Habitations Lacustres* to confine himself almost exclusively within the actual limits of Switzerland, it is not the less certain that the ancient civilization with which he is engaged spread itself extensively over both Gaul and Italy.

I.

During the winter of 1853-'54 a remarkable depression was observed in the level of the Lake of Zurich: the retreat of the waters laid bare a wide surface, of which the inhabitants of the shores took advantage to construct dykes far in advance of the ancient water line, and thus acquired extensive tracts which had been hitherto submerged. Near the hamlet of Obermeilen the laborers occupied in the work of embankment discovered, under a bed of mud of half a demi-metre in depth, some piles, bits of charcoal, stones blackened by fire, bones and various utensils which indicated the existence of an ancient village. Having been informed of this interesting discovery, M. Ferdinand Keller, of Zurich, hastened to investigate the relics just discovered, and soon after announced to the scientific world the result of his researches. This formed the starting-point of incessant explorations. MM. Uhlmann, Jahn, Schwab, Troyon, Forel, Rey, Desor, and many others have from that time been engaged in having the shoals of the Swiss lakes dredged. For the purpose of discovering traces of ancient habitations, they sounded the alluvial deposits formed on the lacustrine strands and in the deltas of rivers, and with the same view they have visited the lakes of Italy, those of the French Jura and of Savoy; hence their collection of historical materials is constantly increasing. Within the limits of their own country alone they have discovered under the surface of the waters the remains of a hundred and fifty villages, and no season passes without their announcing new ones. Already the larger cities of Switzerland and many learned individuals offer to the inspection of the curious archæological museums comprising thousands of ancient relics. From the aquatic village of Concise alone, which is situated in the lake of Neuchatel, about twenty-five thousand objects have been obtained, and perhaps even a still more abundant crop may be gathered, since the historic layer spread along the bottom of the lake is of the thickness of a metre.

It is easy to conceive the principal reason which determined the ancient tribes of Helvetia to erect their constructions on the shallows of lakes. Before the Roman epoch the valleys of the Alps were covered with immense forests, through which roamed the bear, the wolf, the boar, the urus, and other formidable animals, while man, since war must from time to time have raged between the scattered tribes, was still more to be dreaded than the wild beasts. The first care of each group of families, therefore, was to secure its safety against an unforeseen attack by establishing itself in some place defended by natural obstacles. In mountain regions, some would select high and precipitous acclivities; others take refuge in caverns on the sides of perpendicular rocks and fortify the entrance to their subterranean

abode. In watered plains, the peninsula formed by the confluence of two rivers or by the windings of the stream offered inducements for a residence, while those who inhabited countries strewn with lakes, like Switzerland and Savoy, abandoned the dry land and built their huts in the midst of the waters, at some distance from the shore. Here they found the surest means of guarding against sudden attack, with the advantage of being able to transport themselves at pleasure in their canoes to every point of the coast, their rude structures serving at the same time as stations for fishing. Perhaps, also, in choosing the surface of the lakes as a sojourn, they obeyed that irresistible attraction which allures every infant colony towards the water. At all the epochs of history, and in all parts of the world, the requirements of defence and the facilities of fishing, joined with the natural charm of beauty in sheets of water, have determined many tribes of men to build their habitations, whether of boughs or of reeds, above the surface of the waves. There are Assyrian bas-reliefs, which show us men inhabiting artificial isles formed of interlaced reeds, and, according to Hippocrates, the colonists of the Phasis, whom the fishermen of the Volga imitate to this day, raised their huts of rushes in the midst of the river. A well-known passage of Herodotus informs us that the Pæonians of Thrace likewise built their villages on piles driven into the soil of the shallows of Lake Prasias. In our own day the Malays and Chinese established at Bankok and on the coasts of Borneo construct their houses on posts planted in the water at some distance from the shore. Again, when the Spaniards discovered the lagoon of Maracaibo they were surprised at seeing a city on piles, a diminutive Venice of wood, to which one of the republics of Colombia owes its present name of Venezuela.*

It would be easy, even if all the structures of this kind existing in different parts of the world furnished no medium of comparison, to rebuild in thought, by help of the numerous relics found at the bottom of lakes, the lacustrian cottages of ancient Helvetia. A mere glance of the eye through the transparent water enables us to perceive piles in parallel rows, or planted, it may be, without order. The charred beams which are seen between the posts recall the platform once solidly constructed at a height of some feet above the waves. The interlaced boughs, the fragments of clay hardened by fire, evidently belonged to circular walls, and the conic roofs are represented by some layers or beds of reeds, straw and bark. The stones of the fire-place have fallen just below the place which they formerly occupied. The vessels of clay, the heaps of leaves and of moss which served as beds for repose, the arms, the trophies of the chase, the large stag horns and skulls of wild bulls which adorned the walls, all these different objects, mingled together in the mud, are nothing else but the ancient furniture of the habitations. By the side of the

* The *crannoges* of Ireland, some of which were still inhabited so late as 1610, differed from the lacustrian settlements of Switzerland: they were real wooden fortresses built on artificial islets.

piles we can still distinguish remains of the hollowed trunks of trees which served for canoes, and a range of posts indicates the pristine existence of a bridge which led from the threshold of the lacustrian dwelling to the neighboring shore. Not only are we enabled to determine from the number of piles what were the dimensions of the largest aquatic cities, composed generally of two or three hundred cabins; we can even measure in some cases the diameter of the huts constructed so many ages ago. The fragments of the coat of clay which lined them on the inside show on their convex face the marks of the interlaced boughs of the wall, while their concave side is rounded into the arc of a circle; by calculating the radius of this arc we find that the size of the habitations varied from three to five metres, (10 to 16 or 17 feet,) dimensions quite sufficient for a family which seeks in its dwelling a simple shelter.

Athwart an interval of thirty or forty centuries we can conceive how picturesque an effect must have been produced by this agglomeration of small huts closely compacted together in the midst of the waters. The shore was uninhabited; a few domestic animals alone fed in the grassy clearings; great trees spread their masses of verdure over all the slopes; a deep silence brooded in the forest. Upon the waters, on the contrary, all was movement and clamor; the smoke curled above the roofs; the populace bustled upon the platforms; the canoes passed and repassed from one group of dwellings to another, and from the village to the shore; in the distance floated the boats which served for fishing or for war. The water seemed then the real domain of man.

From the first of their discoveries the Swiss archæologists decided that the lacustrian habitations did not all date from one and the same epoch. The study of the objects found at the bottom of the lakes has led them to divide the first cycle of our history into three ages: the age of stone, of bronze and of iron. The scientific inquirers of Scandinavia had already established these three successive periods in reference to their own country; but these ages were not cotemporaneous in the two countries. Civilization was then propagated with the utmost slowness, and centuries passed away before each progression in human industry could penetrate from the south of Europe into the cold regions of the north. The habits of the people were only changed by force of prolonged wars or through distant migrations.

It is in German Switzerland chiefly that the traces of settlements belonging to the age of stone have been recognized. Western Switzerland likewise possessed important lacustrian cities, among others that of Concise, near the southern extremity of Lake Neuchatel, but the Lakes of Zurich and of Constance appear to have been the most active centres of population. It was then that the pile-work of Obermeilen was erected, the discovery of which was the starting point of all that has been since effected. Thanks to the relics obtained at that point, and on the shores of the Lakes of Constance, of Pfäeffikon, of Sempach, of Wauwyl, of Mooseedorf, we can at this day sketch in broad lines the manner of life of the lacustrian populations, and give some general but certain indications with regard to their history.

One of the most surprising considerations suggested by the view of the remains of these primitive constructions is the vast amount of labor accomplished by men who had at their disposal no other implements than flint-stones and the brands of their fires. There was an abundance of trees, tall and straight, growing in the forest, but to fell and trim them it was necessary to employ alternately the sharpened stone and the flame, and afterwards, by the same means, the end of the log was to be reduced to a point, that it might penetrate easily into the soil to a depth of several feet. The hewing of the trunks of trees, which were to serve for floors and esplanades, and which were cleft with wedges of stone, in order to form a sort of planks, demanded still more labor than the preparation of the piles. What time and pains must have been expended when it was requisite to level a trunk of oak from 10 to 15 metres long, and to shape it into a canoe! Some villages, of which we still see the remains, were reared on more than forty thousand piles. It was the work, no doubt, of several successive generations, but for each of these an incessant labor is not the less implied. In addition, the *lacustrians* (for it is by this name that these primitive populations are now designated) dug lines of trenches on the firm lands to protect their domestic animals from wild beasts; they reared *tumuli* and other religious monuments on the heights; at one and the same time they carried on war, the fishery, and the chase; they likewise cultivated the ground, and for so many different occupations had no instruments at their command but those of stone and of bone. The fabrication and the repairing of these instruments must have required inexhaustible patience, for the stone must be cut with stone, and it is with difficulty that we can conceive how these unwearied artisans succeeded in giving a finish to points and blades of silex. They attacked the hardest substances, and worked even in rock-crystal.

"The hatchet," says M. Troyon, "played the greatest part in the primitive industry." This implement is found by hundreds on the sites of the ancient villages. Not only was it the weapon of hunting and of war; it served also for the most various domestic uses, and probably never quitted the hand or the belt of its owner. The blade of the Swiss hatchet, most frequently hewn from a block of serpentine, is much smaller than that of the hatchets used in Scandinavia during the age of stone, and is of an average measure only of from 4 to 6 centimetres. The mode in which the handle was attached to these sharpened stones varied considerably: some were adjusted, by means of ligatures or mortises, at the end of curved sticks; others were made fast to handles of deer-horn. It was as the national weapon that it most exercised the imagination of the workman and artist. Each warrior modified it according to his personal taste, and perhaps ornamented it with feathers and fringes, like the Indian red-skin. Other arms, of less importance than the hatchet, were the arrows of flint or of bone fixed in the end of long reeds; they resemble those discovered in France, in England, and on the banks of the Mississippi, but in general they are not so long as those of Scandinavia. It is very probable that the sling was in use. Rough stones also served

for projectiles, as is shown by the pebbles with sharp corners lying heaped together in the mud at the side of the piles; too small to be used in the fabrication of implements, they could have been intended for no other purpose but that of defence. Not content with these arms, the lacustrians, skilled already in the art of war, had contrived incendiary balls and bullets formed of charcoal kneaded with clay. These instruments of destruction, which were generally pierced with a hole, that they might be better thrown, could only have served for attack; they were ignited, and then tossed on the roofs of the hostile huts. If some projection detained them, they burned insidiously on the dried thatch, the fire spread by degrees, and soon the top of the structure was wrapt in flames. It was thus that the Nervii fired the camp of Cæsar. From the first days of his history man has employed his ingenuity in burning and destroying.

Among the instruments of labor manufactured by the lacustrian people of the age of stone may be cited blades of silex, edged or toothed, which served as knives and saws, hammers, anvils, awls of bone or of deer's horn, paring-knives, and needles, which were destined, no doubt, for cutting or sewing leather or skins. The fragments of pottery which occur are formed of a coarse clay, the paste of which is usually intermingled with small grains of quartz. These vessels betray the infancy of the art, and very seldom present traces of ornamentation. Some, of quite a fine paste, have a smooth surface, and are colored black by means of graphite. At Wangen, on the borders of the Lake of Constance, at Robenhausen, in the Lake of Pfaffikon, mats of hemp and of flax, and even real cloth, have been discovered, as well as small baskets in all respects like those of ancient Egyptian tombs. The lacustrians manufactured likewise cords and cables from textile fibres and the bark of various trees. Vain, like all savages, they bestowed great pains on their corporeal beauty, and sought to enhance it by numerous artifices; they tucked up their hair with pins of bone, decorated their fingers with rings and their wrists with heavy bracelets, and loaded their shoulders with collars formed of balls of deer's horn, mingled with bits of stone; on their breasts they wore the teeth of bears, doubtless to endue them with the force of the wild beast and preserve them from mischances. The large disks of stone found at the bottom of their lakes served as quoits to amuse them after the arduous labor of the day. The pierced nuts now scattered in the mud were, no doubt, toys with which, as rattles, the mothers amused their little nurslings.

Other discoveries have been made which show that agriculture was somewhat advanced among the lacustrian tribes of this first period, and we should consequently assign them a much more elevated rank than was originally supposed. Doubtless hunting and fishing supplied the greater part of their food, as is indicated by the very situation of their homes in the midst of the waters, and by the bones, partly devoured, of the urus, the bison, the deer, the elk, the roe, the chamois, and birds of the woods, which are found in the beds of turf or mud of their ancient habitations. Wild fruits also furnished a portion of their aliment, as there have been found amongst the

remnants of their fare pine and beech nuts, walnuts and seeds of the raspberry; but at the same time they reared herds of beeves, sheep, goats, swine, and were accustomed to employ the dog as a substitute in the care of their domestic animals. They manufactured a kind of cheese in vessels pierced with holes, cultivated the apple, pear, and plum tree, and stored away their fruit for the winter. They sowed barley and different sorts of grain of excellent quality. Among the ruins of a lacustrian village, on the lake of Constance, M. Löhle has discovered an ancient storehouse, containing about a hundred measures of barley and wheat, both shelled and in the ear. He found likewise a portion of real bread, which had been preserved by its carbonization, and consisted of crushed grains, to which the bran still adhered. Thus, with the exception of poultry and eggs, the food of the primitive inhabitants of Helvetia in all respects resembled our own.

The possession of the cereals, those humble plants which constitute the most important acquisition of the human race, would, of itself, suffice to prove that the nameless tribes of the age of stone might lay claim to a long period of past progress. The attentive exploration of lacustrian villages has shown that their inhabitants also practiced on a large scale what we call the *division of labor*. Certain localities, in fact, such as Moosseedorf, Obermeilen, and Concise, present so great a profusion of implements, some finished and others simply rough-hewn, that we cannot help recognizing those settlements as real places of manufacture. They were the industrial cities of that era, and each of them exercised a peculiar specialty, which implied a considerable system of exchanges between the different centres of production. There must have existed also no unimportant commerce with distant countries, for there have been found on the lacustrian sites a great number of substances foreign to Switzerland. The rocks of the neighboring mountains, the horns of deer and bones of wild animals might have served, it is true, for the fabrication of almost all the implements; but the projectile arms, made of silex, could have come only from Gaul or Germany. By exchange from one hand to another, the lacustrians received coral from the tribes of the Mediterranean, purchased yellow amber from the dwellers on the Baltic, and imported the valuable nephrite from the countries of the east. Those among the learned who believe in the Asiatic origin of all nations may assume that the lacustrians had themselves brought from Asia a considerable quantity of nephrites; but how could they have obtained the silex, amber, and coral, unless by commerce? People who pursue the chase do not fear expeditions which shall last for weeks and months. Thus it was that before the arrival of Europeans the Indians of the great lakes were in constant communication with those of the lower Mississippi. Whether with a view to traffic or to form alliances against enemies nearer at hand, they fearlessly undertook journeys of prodigious extent across the savannahs, the forests, and the great rivers.

If their agricultural knowledge, their industry, and their extended commerce were of a nature to raise in the scale of races these primi-

tive tribes, whom we should have been tempted at first to consider but little developed, their religion—that is to say, the highest expression of their genius—bore also a good testimony in their favor. Like the Celts, the lacustrians seemed to have adored the Divinity in open nature, on the summit of hills, under the mysterious shades of the wood, on the bosom of the waves, or more especially at the foot of the erratic blocks, which they doubtless regarded as stones fallen from heaven. Most archæologists do not hesitate to attribute to them the erection of a great number of menhirs and other stones, improperly designated under the general term of druidical. The most considerable of the tumuli of Switzerland equally pertain to the first age, for they never enclose any relics but those of the primitive industry, without a trace of metal. The remarkable elevation of these tumuli, which often rise from 10 to 20 and even 30 metres in height, seems to prove that the men of the age of stone cherished a profound respect for their dead. These were deposited in the sepulchral cavity, with the arms folded across one another on the breast, and the knees drawn up beneath the chin, as if to testify by this attitude—which is that of the infant before birth—that man in dying enters into the womb of the universal mother. Even recently some communities of the Alpine valleys observed an affecting ceremony in their funeral rites. When the tomb was just closed, the mothers drew near to shed a drop of their milk on the freshly-stirred earth. It is perhaps to the age of stone that we should attribute the origin of this custom. In no instance has there been found any vestige in the tumuli of this era which would authorize us to suppose that the aborigines of Switzerland had ever sacrificed human victims to the manes of their dead. Those ferocious rites, which the Helvetians of the age of iron celebrated at a later period, were completely unknown to the lacustrians.

To what periods of history must we refer that age of stone revealed to us in the deposit of archæological remains in the lakes of Switzerland? In this we have one of the first questions which presents itself to the mind. M. Troyon sought at first to resolve it by studying the formation of the turf on the sites of different lacustrian villages. By an ingenious process, which recalls that of the botanist computing the age of a tree from the number of its concentric rings, he endeavored to establish the age of the accumulations of implements and utensils at the bottom of the lakes by determining how many centuries have been required for the deposit of the superposed layers of turf; but, unfortunately, the production of the turf is effected with more or less slowness, according to laws not yet known, and M. Troyon has been obliged to recur to another mode of determination, which was furnished by the lacustrian villages of western Switzerland.

Under the alluvial strata deposited by the torrents which discharge themselves into the lakes of Geneva and Neuchatel there have been discovered numerous groups of piles dating evidently from the age of stone. An ancient lacustrian site of this epoch is found near Villeneuve, at more than 450 metres from the present shore of Lake

Leman. There have been also recognized traces of villages of the same age on different points of the alluvial deposits of the Neuchatel basin: at the mouths of the Mantua and the Reuse; in the midst of the marsh of the Thiele, and chiefly in the marshy valley of the Orbe, which stretches to the south of the town of Yverdun. In order to know the age of these piles buried under the deposits of alluvium, it suffices to measure the distance which separates the present bank from the ancient one, and to find between these two concentric lines a given point of which the age is known, and which may furnish an approximate estimate of the rate of progress of the alluvium. This point exists in the valley of the Orbe: it is the site of the ruins of the ancient gallo-Roman city of Eburodunum. Between the down on which they rest and the lake, on the space partly occupied by the town of Yverdun, there is found no vestige of Roman antiquities; and we may thence conclude that, at the commencement of our era, the shore of the lake approached much more nearly to the foot of the down. Admitting that its waters bathed the walls of the *castrum eburodunense*, it would have required at least fifteen centuries for the formation of the zone of 800 metres in extent, which lies between the ruins and the shore; but it is highly probable that the retreat of the waters has not been so rapid, for the Celtic name of Eburodunum testifies in favor of a more ancient establishment than that of the Romans. However, if we accept as a point of comparison this datum of fifteen centuries, (evidently too little,) we perceive that another period of eighteen centuries must have been necessary for the filling up of the space of 1,000 metres which separates the down from the ancient piles situated to the south, at the base of the hillock of Chamblon: thus we are carried back to the fifteenth century before our era. At the latest it was at this epoch, and, perhaps, long before, that the lacustrian village of Chamblon, invaded by the turf and the alluvium of the Orbe, must have been abandoned by its inhabitants. In order to arrive at the epoch of the foundation, it is still necessary to ascend the course of ages, and to add some centuries for the filling up of the strait which separated the village from the ancient shore, still easily recognizable at the foot of the isolated little hill. While acknowledging that these figures establish nothing absolutely, M. Troyon is led to fix the construction of the lacustrian habitations of Chamblon by the primitive colonists of Helvetia at two thousand years before the Christian era. It might, perhaps, be objected that the level of the lake may have sunk considerably during the historic ages, and have left dry the marshy plain of Yverdun; but the ancient shore is situated at exactly the same height with the present shore. The level of the lake has, therefore, remained the same during the last forty centuries of history.

The result to which M. Troyon has been conducted by the examination of the alluvial deposits of the valley of the Orbe seems to us one of the greatest triumphs of geology. This science, which had already taught us the relative age of the fossil plants and animals of our globe, serves now to determine the critical chronology of the races of men which have succeeded one another on the surface of the

earth. Where historical monuments and written testimonies fail, there it is that the function of the geologist begins. He explores those beds deposited by the waters one grain of sand after another; he exhumes the gnawed bones, the pottery, the relics of every kind long stored up in the archives of the strata; and the examination of these objects suffices him for the retrieval from oblivion of engulfed populations. Thanks to his researches, the history of man in the countries of western Europe is removed backward two thousand years. Henceforth it is a fact assured to science, that a race of hunters, of agriculturists, and of artisans, lived in Helvetia eight or ten centuries before the war of Troy, and commenced with the tribes established in Germany and on the coasts of the Baltic. The field of natural history is equally aggrandized; for, if the mammoth and other animals cotemporary with the races of men had long disappeared, the bison, the great elk, the wild goat, the beaver, still inhabited the forests of central Europe. Finally, we learn a fact of the greatest importance for the history of the globe itself, namely, that the climate of Helvetia has not sensibly varied since four thousand years ago. The trees and plants which grow to-day in that region grew there then; the same fruits, cultivated and wild, served for human aliment; the sole difference revealed by the study of the remains of the age of stone is, that the water-caltrop (*trapa natans*) and the dwarf water lily, which exist no longer in the lakes of Switzerland, then grew there in abundance. This equality of climate during a period of forty centuries is a serious objection to the hypothesis of polar deluges first proposed by M. Adhémar, and since developed by MM. Le Hon and De Jouvencel.

II.

Articles made of metal were not absolutely unknown to the lacustrians at the close of the first age, as is shown by some relics found at Obermeilen and Concise; but the perfection, as well as rarity of the objects discovered, evince that they came from abroad, whether in the way of exchange or through the chances of war. It would be absurd to suppose that those primitive tribes had proceeded fully prepared to the fabrication of bronze without having previously availed themselves of copper and tin. The phenomenon of an alloy of the two metals can only be explained by the arrival of a new people bringing with them a new civilization. In Hindostan, in Central Asia, in America, the age of copper succeeded slowly and gradually to the age of stone—the age of bronze, in turn, replaced by degrees the age of copper; but in Helvetia, as well as in all western Europe, this latter period is not represented: the bronze abruptly follows the stone. It is because two races had come into collision. The end of the first age must have been marked by terrible events. In almost all the lacustrian villages the verge of the two epochs is sharply indicated by the burning of dwellings and the massacre of the people. The intruders, probably of the Celtic stock, wielded axes of metal, and by virtue of the superiority of their arms

must have had their own way with the poor natives—just as the Spaniards mastered the Indians with ease when they invaded Mexico and Peru, mounted on fiery steeds and launching death from a distance.

It would seem that the lacustrian population of eastern Switzerland suffered most from the conquest. The greater part of the pile-work settlements of that region were completely abandoned, and since that epoch their remains have been buried beneath the waters. The aquatic villages of western Switzerland equally exhibit distinct traces of conflagration; some, such as the celebrated Steinberg, (mountain of stones,) situated in the lake of Bienne, were reconstructed on the same site; others, after their destruction, were rebuilt at a greater distance from the shore, so as to be beyond the reach of incendiary projectiles; in fine, numerous groups of habitations were reared on the shallows, till then unoccupied, of the lakes of Geneva, Neuchatel, Bienne, and Morat. At the commencement of the age of bronze, the lacustrian population of the country seems to have removed in mass to escape the vicinity of the enemy who had seized upon the whole of eastern Helvetia, now occupied by the Swiss, who speak the German language. Withdrawn into the territory which forms the present French-Switzerland, the lacustrians were fortunate enough to repress all invasions, and at the same time to appropriate all the industrial secrets which their conquerors had brought with them from the east. Thanks to this contact with a more civilized race, a new era of prosperity seems to have opened for them, and the census of the lacustrian population largely increased.* The villages of the age of bronze much surpass in number those of the preceding period, and in the fens of the Thiele, between the lakes of Bienne and Neuchatel, the piles are found in such quantity as to have given rise to an actual trade in wood.

The wear and waste, more or less complete, of the posts suffices in general to indicate whether the villages whose sites have been recognized pertained to the age of bronze or that of stone. Almost all the piles of the more ancient epoch have been wasted away by the waters to the very surface of the ground, while those of the second period still project to the extent of one or even two metres. In general, the lacustrian constructions underwent no change of form, doubtless because the customs of the people had remained the same; yet M. Troyon also mentions cabins built on rafts, and habitations similar to the huts of the Bosphorus, perched, at different heights, on long poles oblique and crossed like the interlaced boughs of a tree. As to the choice of sites there is apparent, in the second age as well as the first, a rare sagacity. The points of the shore over against the places colonized by these old lacustrian tribes have, for the most part, not ceased to be occupied even to our own day by cities or

* By measuring the dimensions of fifty-one aquatic settlements of the age of stone, discovered in 1860, M. Troyon computes that the total population of the lakes amounted to 31,875 persons. By an analogous calculation, sixty-eight villages of western Switzerland, constructed during the age of bronze, would have contained a population of 42,500 inhabitants.

important villages. The city of Zurich covers a lacustrian settlement of the age of stone; during the age of bronze a village on piles might have been seen on the site of the present city of Geneva.

Once in possession of metal, industry attained a great superiority over that of the preceding period, but a resemblance subsists in the form and nature of its products. The axe continues to be the faithful comrade of the warrior, and the artist employs all his skill in decorating it. To this arm of battle new instruments of death are added, the sword of bronze and the mace of stone; but arrows have become very rare, which proves that instead of engaging in combat at a distance, like their fathers, the natives were accustomed to march straight up to the enemy and fight face to face. They had not forgotten the use of incendiary projectiles. Among the industrial remains of that age we find in like manner knives, reaping hooks, stones for grinding and sharpening, needles, pins, weaver's shuttles, fish hooks, quoits, toys, ear-drops, ornaments in rock crystal, pieces of amber, necklaces of glass and of jet. The potter's ware resembles that of the age of stone, and is composed of an analogous paste, mixed most frequently with small silicious pebbles. Yet the art of the potter has made incontestable progress: the variety of forms is greater and the ornaments more numerous. All the settlements of any importance had their manufactory of earthenware, as is proved by the specimens which have been disfigured in baking and rejected as unmarketable. There were special manufactories for instruments of bronze, for an elegant mould for hatchets has been discovered at Morges and real founderies at Echallens, in the canton of Vaud, and at Dovaine, near Thonon. Moreover a bar of tin which was taken from among the piles of Estavayer proves that the bronze was not imported from abroad in a state of alloyage. The people of Helvetia knew how to procure raw metals, and those valleys of the Alps, which even during the age of stone had been a centre of commerce, on the one side with the Baltic and on the other with the Mediterranean, now exchanged their products with the islands of the Cassiterides. Agriculture developed itself simultaneously with commerce, and it was probably to the progress made in the production of alimentary commodities that the population owed its marked increase. The breeding of domestic animals equally augmented in importance, and the horse, scarcely represented in the age of stone, appeared now in numbers.

The advances of the lacustrian colonies appear not to have deeply modified their religion. After the invasion of the Celts, the priests, faithful to ancient usages, rejected the metal introduced by the profane tribes, and continued to make use of instruments of stone, as in the primitive age. The erratic blocks ceased not to be true altars, as is testified by the numerous objects brought together from neighboring settlements occupied only during the age of bronze: among these venerated blocks are cited the stone of Cour, situated in Lake Lemman, below Lausanne; the stones at Niton, which form islets at a short distance from Geneva, and not far from Estavayer, in Lake Neuchatel; the Pierre au Mariage, on which, even in the last century, the betrothed went to swear mutual fidelity. If the religion of the

lacustrians underwent no change during the age of bronze, it is nevertheless probable that their zeal gradually diminished in consequence of their ever-increasing relations with their neighbors, the Celts. The tumuli which they raised during the second period are much less high than those of the first age, and their dead have no longer the folded position of the embryo in its mother's womb; they are simply seated or even extended on the ground. The lacustrians never adopted at least the custom of the incineration of the corpse, which the Celts had imported from the east, and which, in the religious sentiments of the former, must have seemed a crime against the dead.

The duration of the lacustrian settlements of the age of bronze was very long, if we judge of it from the thickness of the beds of remains and the great difference of the waste which appears in the piles planted at different epochs on the same site; but the destruction of these settlements was as violent as that of the aquatic habitations of the preceding age, for what remains of them under the surface of the waters incontestably bears traces of pillage and conflagration. A new people, armed with blades of iron, invaded the vast undulated plain which stretches between the base of the Alps and that of the Jura, and after a war of more or less duration, finished by possessing themselves of the wooden fortresses in which the lacustrians had taken refuge. The catastrophe was nearly total, for, of seventy or eighty villages which existed in the second age, eleven only present traces of the following age, and of this number we can scarcely count three of them which give indications of a prolonged occupation. The lacustrian villages of Steinburg and Graseren, in the lake of Bienne, and of La Tene, in the lake of Neuchatel, were the only important localities in which the primitive population could seek a refuge. Perhaps some families of the vanquished might have become allied with those of the invaders; but it is probable that the great mass of the aborigines was destroyed or was forced, as a herd of slaves, to adopt the customs of the Helvetian conqueror. The people disappeared, and history has not even recorded their ruin. The lacustrian villages, which had been during the course of so many centuries the residence of a powerful race, were replaced by miserable huts, where the families of fishermen, suspended above the waves, sought a meagre existence. Some remains of rude pottery, dating from the Roman epoch, show that these aquatic abodes were still inhabited at the commencement of our era.

The destruction of the greater part of the lacustrian villages having taken place when iron began to be diffused through the country, we are enabled to fix the epoch of invasion within the limits of a few centuries. The Phocæans of Massilia and the Belgic Cimbri, emigrants in the north of Gaul, had introduced the use of this metal, the former from the commencement of the sixth century, and the latter during the fourth century before the Christian era. By their means iron arms must have soon superseded those of bronze among a great number of the tribes with whom they had commercial intercourse. Thus, towards the fifth or fourth century, iron, the true metal of war, was more or less known to the Gauls, and perhaps the Lacustrian

tribes had already received swords of iron, with other products of industry, from the Phocæans or the Cimbri. Yet the use of arms of bronze was still general when the aboriginal races, attacked by a people with superior arms, sunk in an unequal strife. The invaders are known; they could be no other than the Helvetians of Gaul or of southern Germany. All the testimonies collected by archaeologists agree in identifying their Gallic origin; the Celtic denomination of their villages; the form of their arms, identical with those worn by the Gauls of Brennus during the occupation of Rome; the crescents which they bore as amulets; the practice, in a word, of burning their dead.

The Helvetians were certainly superior to the primitive people in the material part of civilization. The lacustrine deposits of the two first ages offer nothing comparable to the thousands of objects which have been discovered at Tiefenau, near Berne, in the soil of a field of battle of the Helvetian period. Not only did they possess iron and forge swords, which might even now be considered master pieces of art; they also produced glass and enamel, fabricated ornaments of great richness, and, if we believe the testimony of Latin authors, were acquainted with the art of writing. Unfortunately this people, so remarkable for their industry, professed a barbarous religion. There are still to be seen, in different parts of Switzerland, the remains of their sacrifices of human victims. Not far from Lausanne, in the forest of Bois-Genou, rises a tumulus which covered four earthen vases filled with human ashes. A cavity formed above the urns contained the charcoal and cinders of the funeral pile, as well as the calcined remains of animals, among which were recognized the dog, the ox, and the horse. Still higher there was spread "an uneven bed of large, rough stones, on which lay, without order, four human skeletons, whose irregular position showed that the bodies had been thrown with violence on this rude couch. Bracelets, remnants of small chains, brooches, and various ornaments indicated the attire of females, whose youth was evidenced by the incomplete development of the wisdom teeth, still hidden within the alveolus. The limbs of these unhappy victims had been broken by the stones which covered them and which had been cast with such violence that a portion of the ornaments had been shattered by the shock. At a distance of two hundred paces from the tumulus still exists an altar on which, without doubt, the immolation of the wives of the deceased had taken place." Again, at the further distance of two kilometers there was found, under the shade of oaks another tumulus of the Helvetian era, containing twelve skeletons of young persons crushed by blows of the club.

We know that after a sojourn of some centuries in the valleys of the Alps and of the Jura, the Helvetians, always restless and desirous of change, left their mountain country to go to establish themselves in the plains of Gaul. It was then that, for the first time, they enter upon the theatre of history, properly so called, thanks to Cæsar, from whom they sustained, at Bibracté, a bloody defeat. The archaeological discoveries made in various parts of Switzerland enable us

now to ascend the course of time and to reconstruct, in its general features, the history of the Helvetians up to about the fourth or fifth century of the ancient era; but if the chain of ages is reunited for this Gallic tribe, it is not so for the lacustrian colonies, whom the Helvetians had exterminated or reduced to slavery.

What were these aborigines whom archæology has, as it were, resuscitated by an examination of the remains found in the mud of the lakes? Were they of Finnish, Sicilian, Iberian, or Pelasgic origin? Should we seek their native country on the table-land of Iran, or on the soil of western Europe itself? One thing only seems certain, that they were men of small size, more remarkable for their agility than their force. Their narrow bracelets could only encircle delicate arms; their swords, with short handles, could not have been grasped by the large hands of the Gauls and required a certain skill in fencing; in viewing them one might say that they had been wielded by agile warriors like our basque soldiers. Nothing, however, as yet, authorizes the learned to give a definite answer. The form of the skull of the lacustrians would be a datum of great importance in the question, but the skulls and other bones found on the lacustrian sites and in the tombs of the age of stone are rare and offer only remains which it is difficult to study. By a singular contrast, we know the origin, the wars, the migrations, and even the royal genealogies of many ancient people whose manners are unknown to us; and here we have tribes who reveal to us their intimate life, their domestic habits, and who make a mystery of their name. Their productions are collected in our museums, we have been able even to draw up their statistics in an approximative manner, but they pass before us in history like apparitions, and we know not how to connect them with any of the races which precede or which follow them. Let us hope that in the near future the methodic exploration of the antiquities of Europe, and the comparison of all the testimonies furnished by the still buried remains, will enable science to class the lacustrians, to follow their migrations, and mark their halting places. Already have recent discoveries established, in a positive manner, that they also inhabited the lakes of Savoy and upper Italy. We shall, doubtless, succeed in ascertaining what was the extent of their domains at different ante-historic epochs, and, what is even more important, their intimate life; their moral civilization will be elucidated by a thorough study of the tribes which have sustained a development under parallel conditions in different points of the globe, and which still exist in an age of stone and of lacustrian habitations. It is then that we may attempt to write the comparative history of adolescent races—one of the most interesting chapters of the great book of man.

While awaiting the results of systematically organized researches on all the continents, we should highly congratulate the scientific explorers of the lakes of Switzerland on having recovered these humble remains, so long hidden under the waters. These relics also speak a language not less eloquent than that of the great monuments left by the Roman conquerors. The nations whose life is recounted

by all the voices of history are not the only ones which have exercised a great and durable influence on their successors; the savage or barbarous tribes forgotten by the fugitive memory of their descendants have also accomplished their work. Even yesterday, before the piles had been observed through the transparent water of the lakes, we knew nothing of that nation which, during perhaps twenty centuries, had prepared our soil for the civilization which it this day sustains. It is that which contended with the ferocious beasts, cleared the forests, cultivated the earth; it is that which performed the great work of first colonization attributed by the Greeks to their demi-gods. The heroes of Gaul do not bear, like those of Greece, the glorious names of Hercules and Theseus; but, though fallen into oblivion, they have not forfeited their right to our grateful recognition. The living generations are joint heirs with those which have long since disappeared, and in the estimate of our vaunted modern civilization a large share should undoubtedly revert to the tribes without a name of the ages of stone and of bronze.

ELISÉE RECLUS.

THE FAUNA OF MIDDLE EUROPE DURING THE STONE AGE.

BY DR. L. RÜTIMEYER: BASEL, 1861.

[Condensed from the German.]

To the ante-historical eras, which cannot be measured by solar years, the names of stone and bronze age are applied. By these expressions periods are indicated in which certain nations made their implements—whether for domestic, hunting, or agricultural use—of stone, or, later, of copper or some alloy of this metal, but never of iron. Though in the case of some of the ancient nations the time when they changed their implements of stone for those of bronze can be determined chronologically, in general, we can only say that one period succeeded another, as the geologist speaks of older and newer strata, without being able, however, to state any definite periods of time.

Among the most remarkable relics of the stone age are the supposed Celtic implements of flint which have been discovered in the tertiary debris of Amiens and Abbeville. Of later date are the relics of the lacustrine remains in Switzerland. They are found either under the surface of the waters of the Helvetian lakes, or, partly overgrown with turf, upon the ancient beds of inland lakes. The primitive people built their dwellings upon palisades either partly or entirely in the water; and hence the name sometimes given of “palisade buildings.” Mingled with the remains of these buildings, historical records are found, in the form of implements of

the ancient people; and also bones—in most cases the remains of ordinary meals or festive celebrations. From these documents we learn that the ancient people spun and wove cloth garments, and also that they produced pottery by hand.

If any one should have taken the trouble to gather up all these bones, and to submit them to anatomical comparison, he could have advanced various branches of science. He could have enabled the archæologist to show which of the animals were hunted and which were reared by those people; he would have also assisted the anatomist to discover what changes had taken place in skeletons of animals during very long periods of time; he would also have furnished the geologist with the means of determining which species and genera had lived contemporaneously in one or the other locality; he even would have presented facts to enlighten the zoologist as to the interesting and exciting but very difficult questions regarding the origin of species and the possible mutability of types; and, finally, he could have given interesting materials to the husbandman tending to throw light on the history of the more important domestic animals. All these desiderata have lately been most successfully, though modestly, furnished by Professor Rütimeyer, of Basel. A short abridgment of his work may not be without interest; the more so as the results arrived at by this Swiss savant are helping to penetrate the barrier which heretofore has separated history from geology.

The antiquarians of France, remarks Rütimeyer, find stone axes in the mammoth strata of Bretagne; and in the Swiss palisade buildings occur the diluvial bovine species—*Bos primigenius* and *B. trochoceros*—both domesticated.

Among the bones of the lacustrine habitations 66 species of vertebratæ were recognized, viz: 10 of fishes, 3 of reptiles, 17 of birds, and 36 of mammals; 8 domesticated, to wit: of the dog, the hog, the horse, the ass, the goat, the sheep, and at least of two bovine species. Among these neither the bones of chickens nor of cats are found. Predominant above all are the bones of the stag; after these those of the cow. This proves that the chase furnished the principal portion of the food. The bones of hogs appear numerically third in rank. These animals seem to have been more in use as game than as domesticated stock. Still more rare are the bones of deer, goats, and sheep. In later settlements the latter commenced to prevail over the goat. The dog appears quite scarcely represented, as is also the case with the horse and the donkey. The bear, the wolf, the auerox, the bison, the elk, the chamois, and the ibex seem to have served occasionally as game.

Critical comparison enabled science to distinguish the bones of wild from those of domestic animals. Those of the former exhibit a deep brown, almost black, color; a surface smooth and greasy to the touch, and in most cases a wonderfully increased specific gravity; more distinctly marked carinæ; greater roughness, and more acutely cut muscle insertions—in short, the greatest possible distinctness of all the edges and protuberances, together with the least possible

quantity of indifferent surfaces. On domestic animals the bony substance appears—if the expression may be allowed—more soft, spongy, and yielding to plastic impressions. We cannot doubt, says Dr. Rütimeyer, that the new relations of life following the domestication of animals causes a weakening of all the energies of the system, by increased nourishment, and lessened exercise, and additional fattening. These are the results, not of centuries, but of much shorter spaces of time.

It is not to be wondered at if we find the remains of the bear, the badger, the stone marten, the tree marten, the pole-cat, the ermine, the otter, the wolf, the wildcat, the hedgehog, the squirrel, and the wood-mouse; for all these animals inhabit the country even now. It is very remarkable, however, that the fox, during the palisade age, was much smaller than he is now, attaining then only in few cases the average size of what it is at present. Since the ancient times this species has grown one-third larger. The dimensions of animals are thus changeable; but this instance must be considered in connexion with others to be mentioned, in which the size has been considerably diminished.

Of the common rat no traces were found, and we know that this animal immigrated into Europe as late as the middle age; the Asiatic wandering rat is also absent; therefore during the stone era no mammal vermin infested the palisade settlements.

Of the hare only one single relic has been discovered, and we may with some propriety conclude that among those ancient people the eating of this animal was prohibited.

At the time of the palisade buildings the beaver still existed in Switzerland, and maintained itself up to 1846 in the river Leeh. It was even found in 1857 at the mouth of this river. If this interesting rodent could have been protected by state laws, its existence would have been extended a few generations more. The beavers would, however, have died out, for these harmless animals can only exist in complete solitude. How large the distribution of beavers must have been in Bavaria is shown by the fact of the existence of sixty chronographical names which are combined with the word beaver.

During the palisade era, three races of swine (*Sus scrofa*, L.) were in existence, viz: the domesticated, (*S. sc. domesticus*), the same in a wild state, (*S. sc. ferus*), and the turf hog, (*S. sc. palustris*.) The latter race was then found wild and also domesticated, but ceased to exist in its former state during the historical time.

The ancient wild hogs were distinguished from their present descendants by a much superior size, and generally by the more prominent characters by which they are distinguished from the domestic hog.

The characteristic of the turf hog as a distinct race lies in the teeth, especially in the eyeteeth and also the tusks. The latter are much smaller than those of the domestic and the common wild hog; they also remain three-edged when old, while those of its congeners become gradually cylindric. The turf hog still exists in several valleys of Rhätia and Granbünden.

The stag, (*Cervus elaphus*), now extinct within the limits of the

lacustrine habitations, furnished the ancient Swiss with by far the greater part of animal food. The size of this animal was extraordinary, exceeding in height even our largest horse.

The elk was also well represented, and maintained itself on the Rhine down to the tenth and eleventh centuries.

The ibex (*Capra ibex*) was found only once, notwithstanding the little town of Unterseen, in the canton of Bern, carries the figure of this animal in its coat-of-arms.

The chamois is also rare, and it is probable that this and the former were brought only occasionally from the mountains down to the less elevated regions.

The bison (*Bos bison*) appeared quite frequent all over Switzerland during the stone age, but still more common was the auerox (*Bos primigenius*), which, during those times, long passed, was one of the oldest and most constant inhabitants of Switzerland. He existed there in company with certain pachyderms, whose congeners since have receded to Africa.

In the schieferkohle (*slate coal*) of Dürnten (C. of Zürich) most complete remains of *rhinoceros leptorhinus* were found, lying side by side with the teeth of *Bos primigenius* and *Cervus elaphus*. While this *pachyderm* had long ceased to exist in Switzerland, both its contemporary ruminants held out there until a people arrived which spun and wove the fibre of the flax, and reared and milked the progeny of the auerox.

In the lower beds of the drift which, thirty feet thick, overlies the coal of Dürnten, the remains of an elephant are found, which are not only distinct from that represented in the coal, but which never have been discovered lying together upon the same horizon. Higher up, this drift consists of debris of glaciers with remains of marmots and reindeers. Upon an area of but few miles circumference, and within a vertical of only thirty feet, we thus find, first, the auerox associated with *Elephas antiquus* in the coal of Dürnten; afterwards the auerox and the mammoth, in the diluvium of the valley of the Rhine; still later reindeers and marmots, of which the one now is removed from twenty to twenty-five degrees northward, and the other has ascended to the more elevated alpine zones. Finally, on the top in the higher situated turf of Robenhausen, the auerox again appears in company with *Bos bison* and *Cervus alces*.

These are, indeed, extraordinary changes, and it is not improbable that the human species witnessed and suffered under them.

In regard to birds, reptiles, and fishes, the ancient fauna differs but little from that of our day. It is worth noticing, however, that from the condition of the bones of the wild swan we must infer that these birds must have been eaten by the ancient Swiss. It also proves that the lacustrine habitations were not mere summer residences, but must have been occupied also during the cold winter season, when the lakes were frozen over, at which time alone the swan appeared so far south.

The rarest domestic animal of palisade age is the dog, which was occasionally eaten, but was used more commonly to assist in hunting. It is a very remarkable fact, however, and important for the history

of the canine family, that during the whole era of the palisade builders but one single race can be found, which, according to its unvarying characteristics, is identical with that of our pointer. The hog, as a domestic animal, was first wanting during the palisade era; afterwards the turf hog (*Sus scrofa palustris*) appears domesticated before the progeny of the common wild hog (*Sus scrofa ferus*) was raised to that honor.

The horse was exceedingly rare, so much so that we must conclude that this animal was not domesticated by the palisade builders, but was introduced only occasionally perhaps among war spoils.

Of the tamed bovine family a type appears locally limited, which approaches the fossil species of *Bos trochoceros* from the diluvium of Arezzo and Sienna, in Italy. A peculiarity of it is the direction of the horns, which, instead of the three-fold curvature which the auerox exhibits, describe a simple arch in one and the same plane. This race afterwards disappears from Helvetian ground, as also does that of *Bos primigenius*, which has the auerox for a stemholder. The former, however, is preserved in the sub-race of Friedland, Oldenburg, and Holland. The third race of the palisade era, *Bos brachyceros* (identical with *Bos longifrons* of Owen) is considered by Dr. Rütimyer the same as the so-called "*Thurfox Thurfcow*," a race which, under the name of brown cattle, is still found in the counties of Schwyz, Wallis, Obertrasts, and Granbünden. The same anatomist also favors the views of some modern cattle-breeders who recognize among the endemic stock only two races, which are said to hold on to their geographical distribution with the utmost tenacity. The stock-breeders there regarded always only external and seemingly trifling but at the same time very constant characters, and their sagacious suggestions have been fully sustained by the latest osteological researches.

The first and older race is the so-called "*Braunvieh*" (brown cattle,) *Bos brachyceros* of a natural or deer color, without any purer tint and especially lacking in pure white, but otherwise exhibiting every shade from light gray to a dark blackish brown. A peculiarity of this race is also the colors of the hair, which never appear distinct, but invariably run into each other.

The other race is the spotted or speckled, which did not exist among the palisade builders, but was introduced from the north within historical times. It originates from *Bos frontosus*. This race is preserved in its purest state in Saanen and Simmenthal. To it also belongs the black and white spotted race of Fryburg. The pure colored, spotted, or speckled race always shows either uniformly red (bay) or sorrel or black, or white and bay or sorrel, or white and black. One individual showing all three colors is only an exception to the rule.

Of human remains but one skull was discovered. If this should really belong to the palisade age, and if we could be permitted to base a conclusion upon one single specimen, we would say the cranial type since those days has suffered no change, or the palisade builders did not differ osteologically from the Swiss of our own days. It seems the ancient Helvetians did not leave their lacustrine habitations until

the time of the first invasion of the Romans, when probably this singular mode of habitation was abandoned.

We also received by Dr. H. Christ an account of the flora of the palisade age, which presents some noteworthy phytographical results. There were found changed into a hard shining coal with a metallic lustre on the surface well-developed unwrinkled remains of wheat, resembling our *Triticum vulgare*, but much smaller. The grains of our modern wheat measure from seven to eight millimetres, while those of the ancient wheat are only from four to seven millimetres in maximum length. The spike of the ancient wheat is much more full and crowded, whereby the spiculæ are forced into an almost horizontal position.

Hordeum hexastrilms is also found, but *Triticum spelta*, oats and rye, have not been noticed. Thus it appears that wheat, even in our more northern regions, was the oldest cereal in cultivation. One species of *Linum* has also been found with the seeds and capsules most perfectly preserved. It approaches *L. montanum* and also *L. perenne*, but is unlike our *usitatissimum*, the native land of which has not yet been discovered.

Of hemp (*Cannabis*) no traces have been discovered, and therefore the ancient Swiss could not have immigrated from a region where this plant is indigenous.

Apples cut in halves, and probably prepared for preservation, show by their kernels, capsules, and general outlines, a size surpassing that of the modern form of *Pyrus malus*, as represented in the Swiss mountains.

Of pears but one doubtful piece was obtained. A species of *Prunus* (*spinosus*,) perhaps the plum (*P. insititia*,) and sweet cherry, were present. Among the forest trees the presence of the dwarf pine (*P. maghus*) in the lowlands is remarkable because this species has since retired to more elevated alpine and sub-alpine regions. It seems generally that since the palisade era the flora has undergone no material changes; which is contrary to the observations made in Denmark, where the remains of turf exclusively contain but pine and afterwards oak, where now the beech constitutes unbroken forests. This proves some kind of natural rotation, but it is erroneous to suppose that the growth of leafy trees of necessity must be preceded by the lower organized conifers.

Since the palisade age various aquatic plants have receded to the mountains; for instance, *Nuphar pumilum* and *Trapa natans*, which latter now only occurs at Langenthal and Elgy. This change of habitat deserves the more consideration as there is no ground for the belief that the migration of these plants has been influenced by man.

It is as yet impossible to fix the time of the lacustrine habitations chronologically. The last period of it, when the turf hog in its wild state had ceased to exist, and the older bovine races (*Bos trochoceros* and *B. primigenius*) had been replaced by the northern spotted cattle, (*Bos frontosus*,) which announce the period of domesticated races, pertains to historical times. The chronological space backward towards the oldest remains of the palisade age cannot be estimated; it ought not to be measured even with the unlimited scale of geological periods.

The builders of the palisade habitations could not have arrived in Switzerland before the glacier era, which forced the elephant and the rhinoceros far down into Africa, and drove the marmot and the reindeer into the Swiss lowlands. But when middle Europe was warmed up again by sunnier days, a repopulation by a partly new fauna and flora took place upon the ground where before the reign of the glaciers, the auerox, and those large pachyderms, had been grazing together. At this time man made his appearance, accompanied by the dog, the goat, the sheep, the domesticated auerox, and the turf cattle; the latter he may have introduced already tamed, or he may have tamed it after he had found it there in a wild state.

The lake inhabitants of Wangen and Moosedorf, therefore, were not autochtons, in the strict sense of the word, and it is even doubtful whether another race did not inhabit middle Europe before them, and even anterior to the glacier age; for recently there were discovered in a cave near Aurignac (Haute-garonne) seventeen human skeletons, with a number of bones of the mammoth and a contemporaneous rhinoceros, besides those of many other animals. Some of these bones had been artificially opened by human hands for the sake of the marrow—similar to bones which were found under the lacustrine habitations. Those bones in France also exhibit the marks of the teeth of the cave tiger and the hyena spelæa; of both these animals also numerous bones have been found. Remains of the auerox, the reindeer, and the stag were also found there. Thus science has at her disposal the relics of predecessors, witnesses, and followers of the glacier era. Even the horse and the ass were found to be represented there; only the dog is looked for in vain.

On the strength of this fact Dr. Rüttimeyer concludes that man existed before the glacier era, having domesticated at the time several animals, while the elephant and the rhinoceros existed in the regions of middle Europe.

REPORT UPON THE ANTIQUARIAN AND ETHNOLOGICAL COLLECTIONS

OF

THE CANTONAL MUSEUM AT LAUSANNE.

BY FRED. TROYA.

[Translated for the Smithsonian Institution.]

MR. PRESIDENT AND GENTLEMEN: The collections of the Cantonal Museum, which you have intrusted to my care, are those of antiquities and ethnology, on which, in compliance with your circular of the 19th instant, I proceed to report.

The collection of antiquities includes objects of very various origin which may be classed under two general heads, namely, of Swiss antiquities and foreign antiquities. The Swiss antiquities quite

naturally fall into subdivisions corresponding to the various ages to which they belong; the others, few in number in comparison, are classed according to the countries from which they come.

The interest that attaches to these relics arises not merely from their greater or less antiquity, or from their art, more or less perfect, but far more from their being the expression of the different degrees of ancient civilization. Thus the articles discovered in Switzerland give us the history of the state of industry in ancient Helvetia, and those which came from abroad furnish us with an idea of the development peculiar to other lands than our own. Certain of those articles are all the more precious because they belong to an age anterior to the earliest written documents, and allow us, in the absence of these, to reconstruct the history of the early ages of humanity, just as geology enables us to retrace the history of our globe by the study of its strata and its fossils.

The ethnological collection includes the productions of the industry of modern tribes who, as yet, are strangers to European civilization. It is very closely connected with antiquities because, equally with them, it tells us the story of the various degrees of development through which men pass ere they attain to civilization properly so called. We may safely affirm that the various degrees of present human development characterize the successive phases of that development in antiquity. It is easy to appreciate the civilization of a people according to the character of mineral materials used in its industry; and there is a long series to pass through from the savage who supplies the want of metals by the use of stone and bone to the people who use the most various materials. Placing ourselves at that point of view, we perceive that the greater the use of the metals, and especially of iron, among a people, the greater is their industrial development. The application of these observations to antiquity is fertile in unforeseen results. The articles discovered being classed according to the materials employed and the manner of working them up will furnish us with series which, taken in the same country, will indicate the successive phases of that country's civilization. We shall find one age in which, just as among the savages, stone supplied the place of the metals. In another age, copper, tin, gold, and a little silver will be employed for ornaments and for various instruments, as among the Mexicans before the discovery of Columbus. In a third age iron will be superadded to the materials previously known and used, and it is then, and not until then, that we find writing is introduced and get the first historical data. The Helvetians had the arts of writing and of using iron in the time of Julius Cæsar, and our first historical traditions are no older, although, at that date, a great many generations had succeeded each other in our country.

These general considerations suffice to give an idea of the kind of interest possessed by antiquarian and ethnological collections which are, as it were, a picture of human progress, studied in one case in the series of successive ages, in the other in the series of contemporary nations. Let us now see how far our collections exhibit this double series.

I. SWISS ANTIQUITIES.

A. THE STONE AGE.—The name of the stone age is given to the ante-historical period during which the primitive inhabitants of the country were ignorant of the use of the metals, and employed instead of them stone, bone, and even wood. Switzerland was already inhabited during this early period. The museum possesses seven instruments of these rude times which were found in the canton of Vaud, and some *fac-similes* of similar articles from the country are in various hands. The specimens preserved are exceedingly interesting. If their number is very limited, we must bear in mind how far from extensive have been discoveries of the kind in this canton.

B. AGE OF BRONZE.—This age takes its name from the metal used, in the absence of iron, for cutting instruments, and also for various ornaments. The bronze of that period is an alloy of from 10 to 15 parts of tin to from 85 to 90 parts of copper. The tin being brought from England, indicates a certain progress in commerce. The greater part of the copper also must have been imported into our country; which, however, as is proven by some discoveries, possessed founderies, and the art of alloying the metals.

The collection of antiquities includes fifty-eight articles in the bronze of that period, among which are two swords and two daggers complete, three javelin or lance heads, and several *celts*, (a sort of hatchets and chisels,) two sickles, bracelets, brassards, or *arm-pieces* of armor, and a great number of hair-pins. Most of these articles were found in tombs, others in open ground, and some, of which M. F. Forel is the donor, amidst the wreck of the lacustrian habitations of Morges.

C. FIRST AGE OF IRON—*Helvetian period*.—The study of the progress of industry in the country and of the various modes of sepulture has enabled me to distinguish a certain number of tombs and of antiquities which characterize the Helvetian period prior to the Roman domination. It appears, from various observations, that the Helvetians were not the earliest inhabitants of our country. They subjugated a more ancient population, and brought with them the knowledge of iron, which is found in most of their tombs. We also find in their burial places Gallic coins, of from four to two centuries earlier than our era. The Helvetian antiquities are not distinguished solely by the introduction of a new metal; the materials which had previously been used are employed with a new art; new forms and new ornamentation appear. Colored or enamelled glass is used for bracelets, formed of a single ring, and for necklace beads. It will not be deemed irrelevant to add, upon this point, that Pliny the elder, as early as his day, attributed to the Gauls great skill in glass-work.

The museum possesses only seven articles belonging to this third age, namely, two bronze rings, one necklace of beads of glass and amber, two glass bracelets, one lignite bracelet, and a disc, in bronze,

formed of concentric circles. The use made of this last article it is difficult to conjecture.

D. SECOND AGE OF IRON—*Helvetic-Roman period*.—For a long time Roman antiquities monopolized the general attention, and accordingly the museum contains about two hundred and fifty articles of that kind, not including a few fragments of but little value. Iron is employed for axes, arrow-heads, keys, horseshoes, sickles, nails, and various other things; but it is remarkable how rare it is to find the sword of the conquering people, which is wanting in most collections of Roman antiquities.

The museum contains twenty-two statuettes in bronze, some of which are specimens of admirable ancient art. Among them I may mention a Gaulish Jupiter, a Mercury, and a small goat, found at Ursins. As very precious objects, I would also cite the great lamp in bronze, from Nyon; the *taurobole*, (sacrifice of the bull,) from Vidy; a bronze medallion, and an Etruscan mirror, found in the ruins of Aventicum. There are also several clasps or buckles, in bronze and in silver gilt, which are not without interest; also a series of bracelets, found at Bière, characterize Helvetian art under the dominion of Rome. The red earthenware articles are but few, and but little remarkable. With the exception of a few fragments, I need only mention the vase found at Fraidaigues, the reliefs of which have a stag hunt for their subject. Some plain pottery articles are well preserved. Three funeral urns, six large amphoræ, a number of weights, tiles, and pipes for the baths, complete our collection of Roman pottery. As objects of domestic use, the museum contains some household utensils in bronze, and a dozen of grinding stones for hand-mills.

The Roman marbles have been somewhat more increased this year, but even now they but very imperfectly represent the number and the beauty of the decorations of the buildings of that period. As objects of art I have little to cite beyond a small torso from Avenches, a mutilated head of St. Saphorin, a few sculptured fragments of elegant capitals, and a fragment of a sun-dial supported by an eagle rising into flight, a cornice placed in the choir of the cathedral, and a cylindrical vase from the neighborhood of Nyon. To the marbles are attached the Roman inscription, which words are seven in number, and are completed by fac-similes disposed in tapestry. The mosaics consist of a table and some slabs from a pavement at Orbe, presented by M. de Bonstetten. The mosaic from Bangy can be removed from the workshop of M. Doret when the marble room is ready, and that will also be the time for taking up the pavement from Vullierens, deposited in the academy, as well as the mosaic from Yvouand, which I hope can soon be removed.

E. *Helvetic-Burgundian period, (from the 5th to the 9th period.)*—The objects of this new period, to the number of 140, come almost exclusively from sepultures, and are connected with the industry which characterizes the origin of modern civilization. The most remarkable portion consists of fifteen damascened clasps, and nine clasps with

Christian symbols. These last have taken their place in science, revealing, as they do, the commencement of Christian art, and a symbolism especially peculiar to our country. A gold buckle, set with red glass, reminds us of the importation of an oriental art. A small balance, found, together with a sword, in a tomb at Severi, indicates that the person buried there had been a judge. Necklace-beads present curious resemblances to the most ancient art of the Phœnicians, whose productions were found in the ancient tombs of Egypt as well as in those of most European countries from the Crimea to the shores of England. The arms consist chiefly of cutlasses, some lance heads, and two axes. We may also mention four clay vases and four in stone, worked by means of the turning wheel. Finally, the epitaph of the young Laudoalda belongs to the end of that period.

If we look at those objects, in connexion with their prototypes, we shall see reason to be surprised at finding how few models have been borrowed from Roman art, while most of them are found either in the Gallic antiquities of the first iron age, or in those of Siberia, preserved at St. Petersburg.

F. MIDDLE AGE.—Only fifty articles belong to the middle age. The most ancient, and perhaps the most precious, is a small reliquary of sculptured ivory with silver leaves. That article was found in a tomb in the court of the castle of Lausanne, and is connected with the ancient establishment of St. Maire. Some church vases, in brass, bear inscriptions, of which only one is clearly legible—*WART GELUCK ALL ZEIT, be always happy*. These vases were much used during the twelfth century; they are found precisely the same from Syracuse to Drontheim. A great number were made at Lubeck; and in the north of Germany I have seen some still employed upon the baptismal fonts. A small stained glass circular window presents a subject of national interest, the grue, (crane,) of Gruyere. I must further mention keys; spoons; four seals, in bronze; a cutlass; a dagger; a lance head, in iron; knightly spurs; horseshoes; halberds; a crossbow, and some statuettes, in bronze, of the time of the Renaissance. A capital, ornamented with a curious sculpture, found at Maladeire, near Montreux, may take its place in the marble room with some fragments of the architecture of the middle age, found behind the castle of Lausanne.

G. ANCIENT FIRE-ARMS.—A few specimens of fire-arms have been placed in the museum, which may some day form a portion of an armory room. The two pieces of the greatest national interest are a cannon and a mortar, in iron, relics of the great battle of Grandsau. They were presented by Lucien Valotton, of Vallerbes. Six muskets, or fusils, are more or less ornamented; some swords belong to the latter centuries. Two cartridge-boxes with the crane are, no doubt, of a time posterior to the counts of Gruyere.

One of the ornaments of the armory which is yet to be created will, undoubtedly, be the articles connected with the first Napoleon, the gift of M. Noverraz, viz: three saddles, in velvet and gold lace; three bridles, plated with silver; three snaffles; four fusils; the key

of Napoleon's house at Longwood; a map of Switzerland, with strategic annotations; a volume of the Imperial Almanac for the year 1807, and a certain number of medals relating to Napoleon I.

[II. FOREIGN ANTIQUITIES.

A. EGYPT.—Thanks to the generosity of our compatriots, the museum of Lausanne possesses some specimens of Egyptian antiquities. Those articles, it is true, are far from numerous, still they suffice to give some idea of that kind of art, and it is to be hoped that, in the course of time, we shall have, if not an Egyptian museum, at least articles sufficiently numerous to give a better idea of the age of the Pharaohs.

Two mummies, well preserved, occupy a separate case. The Egyptian skeleton has been completely set up, but for the present it has been left in the glass-fronted case of the botanic hall, where also is a handsome wooden sarcophagus in which the bones composing this skeleton were found. We have, also, two mummies of children, a small crocodile, some statuettes and amulets in vitreous clay, four statuettes in bronze, four in wood, some stuffs, and a wooden tablet covered with hieroglyphics.

B. ALBANO.—Seven vases, the gift of the Countess de Rumine, were found in a bed of peperin, situated between Albano and Marino, to the southward of Rome. At that point the most ancient pottery of Italy is found.

C. GREECE.—The ancient art of Greece is represented only by seven vases, found in the vicinity of Athens, and given by Dr. Auguste Chavannes. Their interest consists chiefly in their showing that the art of the potter proper to Magna Grecia was not unknown to Greece, properly so called, a question a long time doubtful, but completely decided by various discoveries.

D. MAGNA GRECIA.—Thirteen vases, six of which are added to her other generous contributions by the Countess de Rumine, are more or less ornamented with the paintings to which the Egyptians have given their name, pictures representing subjects of history, mythology, or common life. Notwithstanding the small number of these vases they suffice to give us an idea of the development of that kind of art in Magna Grecia.

E. ROMAN ANTIQUITIES OF ITALY.—Some slight fragments of marble or stucco, which travellers have brought from different parts of Italy, scarcely deserve mention. But that can by no means be said of some objects found at Rome and presented to the museum by M. the Consul Bègré. They consist of coarse potteries and some articles in bone, such as punches and dice for gaming.

These various articles are about fifty in number. Our own country possesses enough of Roman fragments to make it worth our while

industriously to search for them, which would in nowise prevent us from receiving with gratitude the gifts sent to us from other countries.

The collection of antiquities numbers about seven hundred objects. Of that number one hundred are foreign to Switzerland; most of the others have been found in the canton of Vaud, and seventy-two belong to a time anterior to the Roman domination in Helvetia. Although this collection is not very large, it yet possesses many articles well worthy the attention of antiquaries.

ETHNOLOGICAL COLLECTION.

This collection is devoted to the exhibition of the products of modern industry among peoples strangers to civilization, properly so called. The interest which belongs to this species of study consists not so much in the forms, more or less original, of arms, utensils, and ornaments, as in the diversity in the degrees of contemporaneous development, and in the connexion of the series with that of the successive phases of civilization through past centuries. The productions of people who at the present day are without knowledge of the metals enable us to form a more complete idea of the progress made in bygone ages by an industry which was equally without the metals. On the other hand, the analogy of the forms and processes employed in ancient and modern times shows us that the savage state is in reality only the extension of the age of stone, but it is important to prove that every stationary state is a state of degradation. And accordingly the lacustrian peoples, even in the most remote antiquity, differed in very many respects from the existing savage. We see among the earliest population of Europe the same lack of materials, but even in their early age that population progressively developed its industry. One of the chief causes of the stationary state is the immobility of ideas arising from the want of communication which constitutes the isolation that is always hostile to progress. Isolation had the same effect upon the first emigrants into the west as upon the savages of our own time, but with this difference, that with the former the conditions of existence changed, while with the latter they remained the unchanged and the insurmountable barriers to progress. Like causes produce like effects, and we may affirm in general terms that man placed under analogous conditions of existence acts in an analogous manner, independently of both time and place. For this reason the study of the various degrees of contemporaneous industry serves to throw new light upon that of anterior ages. The astonishing variety of industrial products, in ancient as well as in modern times, proceeds from general laws, the application of which, in substance the same, proves in a very striking manner the unity of the human mind.

Our collections are, doubtless, very insufficient to justify these observations to their full extent, but it is to this result that they must tend if they are to have a really scientific value.

It will suffice to indicate, according to the places of their origin, the objects collected in the museum, to note some of those resem-

blances, and to have an idea of the nature of a certain number of articles which must have been made and used by the primitive people of our own countries, but which the destroying action of long ages has prevented from coming down to us.

A. NORTH AMERICA.—Thirteen arrow heads of flint, found upon the banks of the Ohio, and precisely like those of Europe in the age of stone.

Arrows, with their shafts.

Two pipes, one of them from Canada.

A saddle, in cloth.

Moccasins and a cap.

A basket of the Esquimaux of the coast of Labrador.

B. ANTILLES.—A fan from the island of Cuba.

Five arrows entirely of wood, from the island of St. Croix.

C. SOUTH AMERICA.—The hammock, or cot, of a Brazilian chief. It is composed of stuff and decorated with garlands of feathers.

D. SOCIETY ISLANDS.—Stuffs in bark and Otaheitan paper.

E. FRIENDLY ISLANDS.—A fly-flap; a club of carved wood; a basket.

F. NEW CALEDONIA.—A club of carved wood; two scalping instruments, one of stone, the other of hard wood; a bag for sling-stones.

G. EAST INDIES—ASIA.—Six arrows, with iron heads.

A sagaye, (African assagai,) a kind of spear for either thrusting with the hand or hurling from it.

A sandal wood necklace, from Bengal.

H. CHINA.—A large parasol and shoes.

I. SENEGAL—AFRICA.—A bow and a quiver containing fifty arrows, with iron points or heads.

K. ARTICLES FROM COUNTRIES UNMENTIONED.—Two aprons to conceal the nakedness of women; two fans; stuffs; a purse; seven woven baskets; seven vases, made of calabashes; an oar; two slings; a bow; several arrows; four casse têtes, or tomahawks; and two hatchets, in serpentine, which give an idea of the manner in which this instrument was furnished with its handle in the olden time.

OBSERVATIONS.

The foregoing details will show that the collections of antiquities and ethnology are not without considerable value, although there are some very important blanks yet to be filled up.

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It is especially our duty to complete the national antiquities, which, as regards Switzerland, may supply the lack of written documents. When the pecuniary resources of a country do not allow of its procuring the beautiful productions of ancient art, that country should at least, to the fullest extent, avail itself of the resources which it can command. Had the State consented to examine by means of the dredge, or, still better, by means of the diving-bell, some of the lacustrine sites, which are so numerous on our shores, there would, undoubtedly, have been recovered very many objects which are imbedded in the mud and slime of our lakes, and, from one or more points, we should have recovered relics of the age of stone, which at present is represented by only a very small number of specimens.

If our collections are really and considerably to be extended, researches should also be made at points where we find burial places or ruins, which hitherto have been but superficially examined; but I am well aware of the difficulties which present themselves to this class of researches.

As relates to foreign antiquities, of which we already possess some specimens, opportunities occasionally present themselves for purchasing, at a moderate price, articles which, though of not the very first importance, would serve to complete series. As relates to this, we should offer proper inducements to our compatriots abroad to come to our aid.

I will suggest two other methods which, beyond all doubt, would contribute to the increase of our collections. The first would be to open rooms for systematic exhibition, so that the intelligent public should be not only interested but instructed. It is especially necessary that the cabinet of antiquities, *too often a mere sealed book*, should be more freely thrown open, and not kept, as it is now, more frequently closed than the other collections. More than once I have heard, from both compatriots and learned foreigners, complaints of the close of the cabinet of antiquities, even when the other departments of the museum have been open. No doubt the difficulty arises from the lack of a sufficient surveillance over all the rooms when open, a point upon which great improvement is very much needed. That surveillance could be maintained on open days by two or three gendarmes, who might be taken either from the military post or from the town sergeants, under the authority of the municipality of Lausanne.

Finally, if we would induce donations, we must not only exhibit our treasures properly, and make them to the utmost extent accessible, but we must impress upon the public the true end proposed in forming national collections. There are various means by which this object may be secured. We may insert in the public journals reports both more frequent and in greater detail, or we may publish a small and popularly written work on the present condition and contents of the museum, which work would be greatly aided and facilitated by the reports which are required from the conservators of the cantonal collections. The better and the more

widely to make known both what we possess and what we stand in need of, a certain number of copies of the suggested work might be distributed in the country; and it would not be amiss to send, also, some copies to those of our compatriots abroad who are in a position to aid us. The interest which the Swiss everywhere take in all that concerns their fatherland is too well known to allow of any doubt that such an appeal would be properly answered.

SUMMARY OF SUGGESTIONS SUBMITTED FOR THE CONSIDERATION OF THE
COMMISSION OF THE MUSEUMS.

1. To undertake researches with the dredge, or, still better, with the diving-bell, upon the sites of lacustrian habitations.

2. To grant an allowance to some of our compatriots abroad to enable them to collect antiquities or ethnological objects in Italy, the Indies, Australia, and America.

3. To hasten the completion of the repairs of the marble room.

4. To open the cabinet of antiquities as often as that of the other rooms of the museum.

5. To have gendarmes or civic police in attendance on the open days.

6. To publish a popular work on the object and present state of the museum.

REPORT TO THE COMMISSIONERS OF THE MUSEUMS OF THE CANTON OF VAUD,

ON THE

RESEARCHES MADE AT CONCISE,

FROM SEPTEMBER 23 TO OCTOBER 19, 1861.

BY FRED. TROYON.

THE proceeds of the public exhibitions at Lausanne, in the year 1859, for the benefit of the cantonal collections, allowed a sum of six hundred francs to be devoted to the acquisition of antiquities for the museum. The allotment of that sum enabled me, in the same year, to make researches, the result of which is described in my work on Lacustrian Habitations, pages 132, 139. Shortly afterward the remainder of the money devoted to the museum of antiquities was absorbed by the purchase of a great number of specimens discovered during the construction of the railway at Concise; but that advance having been repaid to me by the state, it has served as current funds until quite lately, when further expenses for new researches put an end to our resources.

Among the numerous places of exploration Concise was especially fitted for our researches by its high antiquity and the great number

of relics which it had previously afforded. There was yet another consideration to recommend it had any such been required. The fabrication of counterfeits invited by the great prices obtained by the railway laborers for the antiquities which they found at Concise, had caused much doubt alike as to the authenticity of many articles, and even as to the scientific value of the discovery. Those counterfeits, distributed in great numbers, are the more to be regretted, because the lacustrian site of Concise presents specimens of a peculiar industry, among which working tools of wood and stags' horn occupy an important place. In spite, however, of the existence of these numerous counterfeits, it is possible to distinguish the authentic types; but this being a business of appreciation it is not to be wondered at that opinions differed very much in regard to it. It was important therefore to undertake new researches at Concise and to adopt all possible precautions against counterfeits, so as to restore this locality to the place that it deserves to hold in the history of the discovery of lacustrian antiquities.

One of the best means for working with but limited resources, in sites covered with water, is the employment of the dredge or drag, which I have already described in my report to the commission of the museums of the 27th of December, 1858, of which subsequent experience has established the utility. Professor Gay, vice-president of your commission, and M. Bridel, engineer at Yverdon, have had an armed drag constructed which perfectly answers our purpose. The directors of the West Switzerland Railway Company on their part very kindly placed at our disposal a raft and the other things needful for our enterprise. Three laborers were sufficient to work our drag, which they did under the inspection of a person charged with that duty, and enjoined to place the produce of every haul into a chest furnished with a padlock. Two theological students in succession exercised this surveillance of the laborers, M. Alexis de Loës and M. Auguste Buttin, both of whom deserve our thanks for the conscientious manner in which they performed their fatiguing task. M. de Loës having during the first fortnight superintended the works with much zeal, was, at the end of that time, succeeded by M. Buttin, who, with like zeal, superintended during the next fortnight. I, also, went several times to Concise to inspect the works and to make various observations. The dredging continued from the 23d of September to the 19th of October, but bad weather limited the actual working time to nineteen days. The care and precautions bestowed upon these researches left no room for the slightest doubt as to the authenticity of the articles obtained from the dredge.

The lacustrian deposit of Concise, notwithstanding the considerable amount of detritus removed by the steam dredge in 1859, is still very far from being exhausted. It forms a submerged hill or mound of four hundred and sixty feet in length by two hundred and fifty feet in breadth, its greatest diameter being almost parallel to the railway. The bed of materials accumulated above the primitive bottom of the lake is about four feet, consisting of mud, sand, gravel, and stones, varying in diameter from a few inches to one or two feet, and con-

tains in its whole depth relics of ancient industry, so that its formation corresponds with the duration of the village or hamlet which existed at that point. A stone hatchet has even been found among the flints on the surface of the ground, and it was covered with a thick layer of soft, sandy stone upon the face that was in contact with the water, whence it follows that this little hill has not been increased in height since it has ceased to be inhabited by man. It is possible that the stones and gravel were at various periods deposited by the inhabitants of the village or hamlet with a view to consolidating the piles. However that may have been, it is amidst those deposits that innumerable remains of past industry may be found.

Pieces of wood and planks, carbonized more or less completely, have been drawn out of the depths of the artificial bed, and seem to indicate that on more than one occasion fire has wholly or partially destroyed the lacustrian dwellings of Concise. Upon some spots, decomposed branches form thick beds which contain various grains and different utensils; on others, the mud has especially accumulated; but in a general way, flints, many of which have been broken by the hand, are scattered over the whole site.

The piles which supported the cabins of this ancient hamlet have been shortened by the destroying action of the waves to the surface of the mound, while their lower extremity, deeply sunken in the earth, remains very perfect. Many of them penetrate but a little into the primitive bottom of the lake, and it is not uncommon to see the very notches made by the stone axes still remaining. The diameter of the piles varies from three to nine inches, and some of them consisted of pieces of wood cleft by the aid of the wedge. The principal kinds of timber employed were fir, birch, and especially oak. More than seven hundred and fifty objects bearing the marks of human industry were obtained by our latest researches, not reckoning innumerable bones of animals, most of which have been broken with the hammer.

The most remarkable and also the rarest articles are instruments which are still furnished with their handles. Of these I shall first mention an axe of the material called serpentine. It is fixed to a handle of buckhorn, the square extremity of which, opposite to the stone, entered the lateral mortise of a handle of fir wood. The three pieces, *i. e.*, the stone axe and the handle pieces, respectively of fir and buckhorn, were brought up together by the drag, and quite evidently all belonged to and formed one instrument. Although the wood is broken at the mortise, the manner in which the three pieces were formed into the one working tool is perfectly obvious. But it is probable that the adjustment was consolidated and strengthened by ligatures like those which I copied in my work upon the lacustrian habitations of ancient and modern times.

Three other fragments of axe handles show that their greatest dimensions corresponded with the cutting edge of the instrument, so that the strokes should be more certain, while the part adapted to the hand was slighter and lighter. Of those implements the whole length is scarcely a foot. Another axe, of serpentine, is still connected with its buckhorn handle of the same form as the preceding.

Two small axes of the same material are fixed to bifurcated handles. Five chisels of stone, still connected with buckhorn handles, present some varieties of form. Two of them, very like modern instruments of the same kind, have a blade of only five or six lines in width and a total length of from thirty-seven lines to five inches. The other two are shorter and wider, having at the end of the handle furthest from the blade a cylindrical bit of wood, the evident use of which had been to allow the hammer to be used without injury to the buckhorn. Two handles of this last kind preserve each a stone, the edge of which in a very decided segment of a circle can scarcely have served but as a mere knife for cutting through slight or soft articles. The imperfection of these rudely contrived tools might make one doubt their antiquity were not the circumstances under which they were discovered an abundant guarantee on that head. It is to be remarked that many of the stones which are still furnished with their handles penetrate but a little way into the buckhorn, and are readily taken out of the kind of socket which holds them. But as that slightness of adherence essentially results from the action of time, it is not an absolute characteristic of authenticity, for six of the pieces described above still preserve so great a strength of cohesion that the stones cannot be removed but with great effort.

Some of the buckhorns are armed with *punches* of *vegetable* material, the conical form of which is very greatly altered by desiccation. An axe handle is traversed lengthwise by a piece of wood broken at its thicker extremity and terminating in a point at the other. A cylinder twelve lines high by an inch in diameter and another buckhorn of egg shape serve as handles to wooden punches or bodkins. Two of these punches or bodkins and eight handles of this latter kind were also found, three of the latter being in an unfinished state.

Out of six buckhorn hammers, pierced transversely with a square or oval aperture, five have still attached to them the remains of their fir wood handles. Two of those hammers have at one of their extremities a cavity, in which we suppose a stone was sometimes fastened; and it is very possible that in some cases this was even sharpened into an axe.

Eight arrow points *in bone*, very like punches, bear traces of a blackish mastic and of fine ligatures. One of these has still attached to it a small fragment of its shaft, and shows, at the point of fracture of the mastic, a line of very small holes, formerly filled with the ligatures that bound the two pieces together. Among the relics in bone which must have been similarly used is a fragment of the inner bone, or tibia, of a leg, the cavity once filled by the marrow serving for the shaft-socket. Numerous staghorns have been used as handles. Six end pieces of antlers have at their thicker extremity a hollow which imitates the form of the stone article used as a cutting knife. One antler bears the impress of a flat instrument which had penetrated two inches deep into the handle; and in another similar article the cavity gives the form of the punch; finally, the cavity of one of these crooked handles resembles the socket of an incisor tooth of a rumi-

nating animal. Though we cannot precisely decide as to what instruments fitted into these antlers or parts of antlers, it is, however, quite certain that they served as handles for tools of various forms. Ten buckhorn handles, four inches in average length, and cut at both ends, have those cylindrical or conical cavities which, according to the objects discovered, may have held either punches or poignards. Some others of various forms, like a raven's beak, or curved naturally, also bear positive marks of having been used as handles. Sixty pieces, having the form of the foregoing, but without the hollow imprint of instruments, must be looked upon as unfinished articles kept in reserve for daily-occurring emergencies, according to a custom still observed by the inhabitants of that neighborhood.

Of fifty-one handles intended to receive stone chisels, twenty are perfect, sixteen have been formerly broken, and fifteen were never finished.

The buckhorn, which plays so considerable a part in the discoveries at Concise, has been especially used for *axe handles*. The last research there brought to light above two hundred, including sixty fragments, some of which, to be sure, may have belonged to the same article. Of that number, sixty-two are perfect, and forty-eight, not reckoning the small fragments, have been more or less so injured as to be useless. These handles are of three different forms. The great majority of them are made with pieces of buckhorn of an almost cylindrical shape, those of the second kind have on one side a prominence which serve as a rest for the hand, and the others, only eight in number, are bifurcated in facets on the part which enters into the handle in such wise as to enable the adjustment to be strengthened by means of a wedge. Twenty antlers, some of which have served as handles, are worn at the point into the form of chisels. Several pieces, also, have been cut into the form of elongated wedges.

A buckhorn and four canons or tibia sawed or split lengthwise, sharpened to very keen points may have served as weapons of war or as instruments of peaceful use. One hundred and one *bone punches* of from one inch to four inches in length, have rounded, oval, or square points. Four show the wear produced by the thread round the punch; six were arranged in the mud brought up by the dredge in the form of the teeth in a comb, but there was no trace of ligature which would warrant the assertion that that arrangement was not merely accidental. Thirty of the punches were made from the rib bones of different animals, and forty exhibited, on the end opposite to the point, a roughness which would have hurt the hand had not the instrument been inserted into a handle. The small dimensions, also, of some of them would have made it almost impossible to use them without handles. The same remark applies to the *bone chisels*, some of which are pointed at both ends; their length varies from one inch to five inches, and their cutting edge or point is from a line to eight lines in breadth. The chisels discovered during the last dredging were forty-six in number. Four teeth of the wild boar are sharpened into the form of a knife, or a miniature bill-hook.

Bone and buckhorn were also used in the manufacture of a variety

of ornaments. A pin, in the shape of a Roman T, is of remarkable fineness, taking into consideration the instruments used by the maker. The fragment of another article of the same kind has a cylindrical head. A crooked pin thirty-five lines in length exhibits less neatness of workmanship. Four pieces, clumsily cut into the form of tile-nails, are evidently unfinished. A small antler, only twenty-four lines long has been carved so as to imitate seven necklace beads placed one above the other, and diminishing from the base to the summit. Two bear's teeth, one having a hole pierced through it, and the other a groove around its roots, were suspended as ornaments or amulets, if we may judge from the subsequent custom. A fragment of a boar's tooth has also a hole pierced through it. Finally a small bead, of a whitish paste and two lines in diameter, testifies the love of even the most primitive people for personal ornaments.

At a period when the metals were unknown, stone held the first rank in manufacture, and the hatchet or axe was used for the most various purposes. Its dimensions, generally very small, varied from one inch to five inches in length, and from six to seventeen lines in breadth. But though this instrument sometimes supplied the place of the *chisel* and the *knife*, these two instruments are found in very clearly defined forms. Our dredgings have enriched the museum with a hundred and forty-five of those instruments, most of which are of opaque, or translucent serpentine. Of this number forty-eight are perfect or nearly so; fifty-eight useless from breakage or excessive wear; thirty-one were left unfinished or were broken while being cut; three present a very oblique blade. Some pieces are of remarkably fine finish, but others are equally coarse, and some mere splinters or fragments of stone have been simply sharpened on the edge so as to serve as knives or chisels. Among the unfinished pieces, one of serpentine was intended to receive an elegantly curved form; and five fragments of an instrument combining the axe and the hammer are of fine work, polished on their whole surface, and although broken at the cavity intended for the handle, they testify to an indisputable progress in the art of cutting and drilling stone. The various kinds of silex that have recently been discovered at Concise, whether opaque or translucent, and whether black, gray, brown, or of a milky white, are, for the most part, foreign to Switzerland, and probably came from France. Two pieces have been cut into arrow heads, one of them having the form of a lozenge. Five pieces are punches, which are quite perfect and may have served either as punches or as arrow heads; one of them is no less than sixty-four lines in length; twelve pieces, more or less fine, and with the edges cut into teeth, were intended to serve as saws, knives, and scrapers. A bone, having a longitudinal groove, was intended to receive one of these instruments; seventeen fragments of worked pieces, or of pieces detached by the hammer, complete, with a rock crystal, the series of this description of objects. I must add, however, that among the numerous flints which, in a proper state, lay scattered through the whole thickness of the artificial bed, there

were found numerous pieces of granite and quartzite, which have received the form of triangularly cut laminæ of silex.

Twelve stone discs, from thirteen lines to two inches in diameter, and from two to eight lines in thickness, have a funnel-shaped hollow on each side or face; the incomplete hollows on two of them enabled us to perceive the workman's mode of procedure. He commenced by cutting away the stone by gentle strokes of an angular instrument, working first on one side of the disc or plate, and then on the other, and when the two hollows met he finished the boring by turning a punch—of silex, no doubt—rapidly round and round, until he had smoothed away all the inequalities left by the first operation. The use of these plates or discs, of various kinds of rock, is doubtful as yet; they may have served as spindle whirls or as weights for a net. A small pebble, oval in form, and pierced on both sides so as to be suspended from a string, would seem rather to indicate the latter as their use.

It is probable that the hammer which served for cutting stone was a piece of flint from the shore, and that when it got broken its angular parts performed the part of the gimlets or awls. The last operation was performed with the aid of grindstones of soft freestone. Of these a great number have been discovered. Thirty of them have been put aside for the museum; all are worn in such a manner as to indicate the use that has been made of them, and many are sufficiently small to have been held in the hand, as our peasants use sharpening stones on their scythes. On one there is a concave and rounded groove, of two or three lines in width, reminding one of the grindstones in the north, on which they sharpen gouges.

Three heavy stones, with concave surface, have served as millstones, between which grain was ground. Though as yet only a very small number of seeds of wheat have been found at Concise, we know that it was cultivated in Switzerland in the stone age, and that in some parts quite abundant stores of it have been found. Raspberry seeds, wild plums, and especially nuts, are by no means rare among the specimens of Concise. Some seeds still remain to be decided upon.

The articles of *pottery* are, in general, very much damaged. According to the fragments that have been collected, the predominant form was that of the cylinder; though the forms of the urn, the saucer, and the bowl have also been discovered. Some specimens have prominences on the upper edge to enable the vessel to be held; in other cases there are holes through which a cord could be passed to serve as a handle. The coarse clay was kneaded with silicious flints, and shaped with the hand; the thickness of the sides is frequently from four to five lines. Some slender fragments of a much finer grayish clay, or covered with a black glazing, and ornamented with grooves or zig-zag lines, show that it is not always easy to distinguish between the pottery of the first age and that of later periods. The vases which were used for other domestic purposes served also for cooking, as is evidenced by the carbonized coating which still adheres to the inside of some of them.

It is interesting to find some *wooden articles* which give an idea of what the industry of the stone age could produce with the imperfect instruments which were at its disposal. The wooden handles, already spoken of, exhibited at the moment of their discovery—that is to say, before they were dried—a surprising finish. Two handles, terminating in a wide knob, were not without some taste. A cup or drinking vase of yew wood, about fifteen lines in depth, four inches in length, and twenty-two lines wide, has been cut with great delicacy. One especially interesting article is a fragment of plank, fifteen lines thick, eleven inches long, and between four and five inches wide. On one of its sides three grooves are cut in the form of a swallow tail, at a distance of between four and five inches from each other; the central one, two inches wide and six lines deep, still retains one of the pegs, intended to join this plank to another. That sort of junction exactly resembles a practice of our own day in some country houses; but this fragment seems to be more likely to have formed part of a door of a cabin, unless, indeed, wooden buildings on our lakes were unknown at so early a period. At the north we have indications of them from the most distant periods; only it is probable that they fastened the planks together otherwise than by pegs. This piece, carbonized on both sides and on one of its ends, is a relic of the fire. Another fragment, with swallow-tail grooves, also came from the midst of the bed of gravel, as did all the pieces of other plank which bear marks of fire. These planks could scarcely have been procured excepting by splitting the trunk of a tree by means of wedges; the stone axe smoothed away the inequalities, and the chisel served to hollow out the grooves. The junction of those pieces by means of pegs, proves that the art of building was carried much further by the lacustrian populations than we should infer from a mere inspection of their working tools. It is not easy to say what was the purpose of a plank pierced with a square and oblique hole. A piece of wood three inches wide was hollowed out into the form of a pipe or gutter to convey water from a roof, but in drying it lost the form which it had when taken out of the water. Various fragments appear to have been oars, clubs, and other instruments. Some are cut into the form of punches; others, which are in that of wedges, have probably been rounded by rolling in the water; a great number were buried at the same spot amidst the piles. These, as I have already mentioned, show the notches made by the stone axe. Even a large mushroom was brought up from amidst the sands. In the fear that I might not be able to keep sufficiently intact some of the specimens, in spite of the means I employed, I had copies of them made in plaster, which exactly represent their forms before they were altered by drying.

The drag or dredge recovered from the middle of the artificial bed of Concise a considerable number of *teeth* and *bones* of animals, of which I may first mention the vertebra of a fish and a piece of rough epidermis, of what creature I cannot as yet say. Some staghorns are of considerable size, and many of them bear the imprints of the

teeth of some gnawing parasite. Other horns are those of the elk and the roebuck.

We find the bear, the boar, the beaver, and a number of jaws of small species of gnawing and carnivorous animals. The horse seems to be as yet rare, the ox is abundant, the goat, the sheep, the domestic swine, and the dog complete the list of domestic animals. This list, still incomplete, can give no adequate idea of the numerous bones discovered; their aggregate weight reaches to many hundred pounds. They are in general very much broken, which may result either from the fabrication of instruments or from the decided taste of the lacustrian population for marrow. Professor Rutimeyer will be good enough to pass judgment upon this rich collection of bones, and while awaiting the results which he will communicate to us I copy from that learned naturalist his list of the animals, the bones of which, preserved in the museum of Lausanne, had been previously obtained from the site of Concise. They are the primitive ox races, *trochoceros* and *brachyceros*, the goat, the marsh hog, primitive races of the sheep and the dog, the stag, the elk, the goat, the bear, the boar, the wolf, the fox, the beaver, the badger, the pole cat, and the martin. The first vertebra of a human back bone must be mentioned, as well as some fragments of skulls which have passed into other hands. It is in the remarkable work that M. Rutimeyer has published upon the fauna of the period of the lacustral habitations in Switzerland that we must study the important scientific questions suggested by these determinations.

Notwithstanding the very numerous and various objects brought to light by our latest dredgings, it is a remarkable fact that not one article of metal was dredged from the bottom of the lake on these occasions. Yet in the labors of 1859 some bronze instruments were discovered; but it must be borne in mind that they were obtained from one of the extremities of the lake at which we had not time to place our drag. Everything tends to establish the belief that, after the destruction of the hamlet, a few cabins which escaped at the time of the fire, or which were subsequently built, were still in existence at the commencement of the following period. I say at the commencement, because during the second age new habitations were built further advanced in the water, where the bronze sword was found which is preserved in the museum of Neufchatel.

The various kinds of objects of industry which have been discovered at Concise were not distributed in the same abundance at all points of the site. The whitish and veined silexes come from the same point, and the two principal kinds of axe helves also come from two different parts of the site. The stone discs with a hole hollowed in them were almost all found in the same place. The spot which contained the most of uninjured objects was called by the laborers "the handle warehouse." Without attaching too much importance to those different species of deposits, it is yet not without interest to add that observations of the same kind have been made at some other sites of lacustrian habitations, which lead to the inference that there already

really did exist actual workshops. Starting from this point of view, we might admit that the workers in bronze occupied only one wing of the hamlet, but the extremely limited number of articles of metal previously found, compared with that of the instruments of stone and of bone, discovered in thousands, sufficiently shows that it was long before bronze was known, and that it was not generally used before the destruction of the old hamlet.

The aggregate of the specimens recently found at Concise shows to how great an extent bone and stag's horns were used in primitive industry. Independently of the serpentine axes fixed in buckhorn, stone knives and chisels also have their handles of this material. Wooden punches still adhere to their handles, and a bone arrow head still exhibits traces of the shaft. Numerous stag horns bear the hollow impress of the instruments of various forms to which they have served as handles. The authenticity of these pieces is a fact important to science. It is to be regretted that the advanced period of the season compelled the suspension of the dredgings earlier than was intended, but I hope that they may be resumed, for the repository of Concise has not yet given its last response.

In my last work I gave the historical results which appear to me to flow from the researches made in late years in the lakes of Switzerland. I shall not, therefore, endeavor to deduce from the preceding data all that results from them as to the industry and the mode of life of the primitive populations of our country, but I will just so far enter into particulars as to show the astonishing abundance of objects in the spot which we have examined.

The dredge, which was worked on this last examination during nineteen days, brought up from the lake at least seven hundred and fifty pieces bearing the impress of human industry, without counting innumerable bones of animals, which, after being carefully culled, covered the raft twice a day with rubbish to be thrown on the slope of the railway. In 1859 the steam-dredge, which worked twenty-five days, recovered from the lake at the same spot fifty raft loads a day. One of the two rafts which attended the steam-dredge was that which we employed, and, according to the statement of the laborers, the amount of rubbish sent to the railroad was at least double that which we obtained from the culling of the objects of industry. It may be added that the steam-dredge brought up antiquities from the beginning to the end of its working. It follows, then, that twelve hundred and fifty raft loads were taken from the same site in 1859, while we in our later dredgings took only thirty-eight, and admitting an average equality of riches of antiquities, the wrecks of industry discovered two years ago amounted to above twenty-four thousand pieces, which is not out of proportion to the sums of money realized by the railway laborers.

The comparatively small number of objects collected by our late dredgings includes articles which had not before been obtained from Concise; as, for instance, a portion of the wooden handles, the planks furnished with swallow-tail grooves, the yew-tree cup, the bone arrows, with traces of mastic, and the wooden punches

fixed in their handles. It is not to be wondered at that the first dredgings, which were thirty-two times larger, should have brought to light some objects of which we have not had the fortune to recover counterparts. I may mention, among others, the teeth fixed to stag's horn, of which M. Rossine, the engineer, got a specimen for the Cantonal Museum on the first day of the working of the steam-dredge, which was before the fabrication of the counterfeits.

Without laying too great stress upon the foregoing figures, they suffice to give a notion of the riches of this site, of its importance, and of the duration of its occupation, as well as of the variety of the types which it may still contain, for all the dredgings have not nearly exhausted the vast bed of the deposits of the antique hamlet of Concise.

ANCIENT MOUNDS AT ST. LOUIS, MISSOURI, IN 1819.

BY T. R. PEALE,

CHIEF EXAMINER IN THE UNITED STATES PATENT OFFICE.

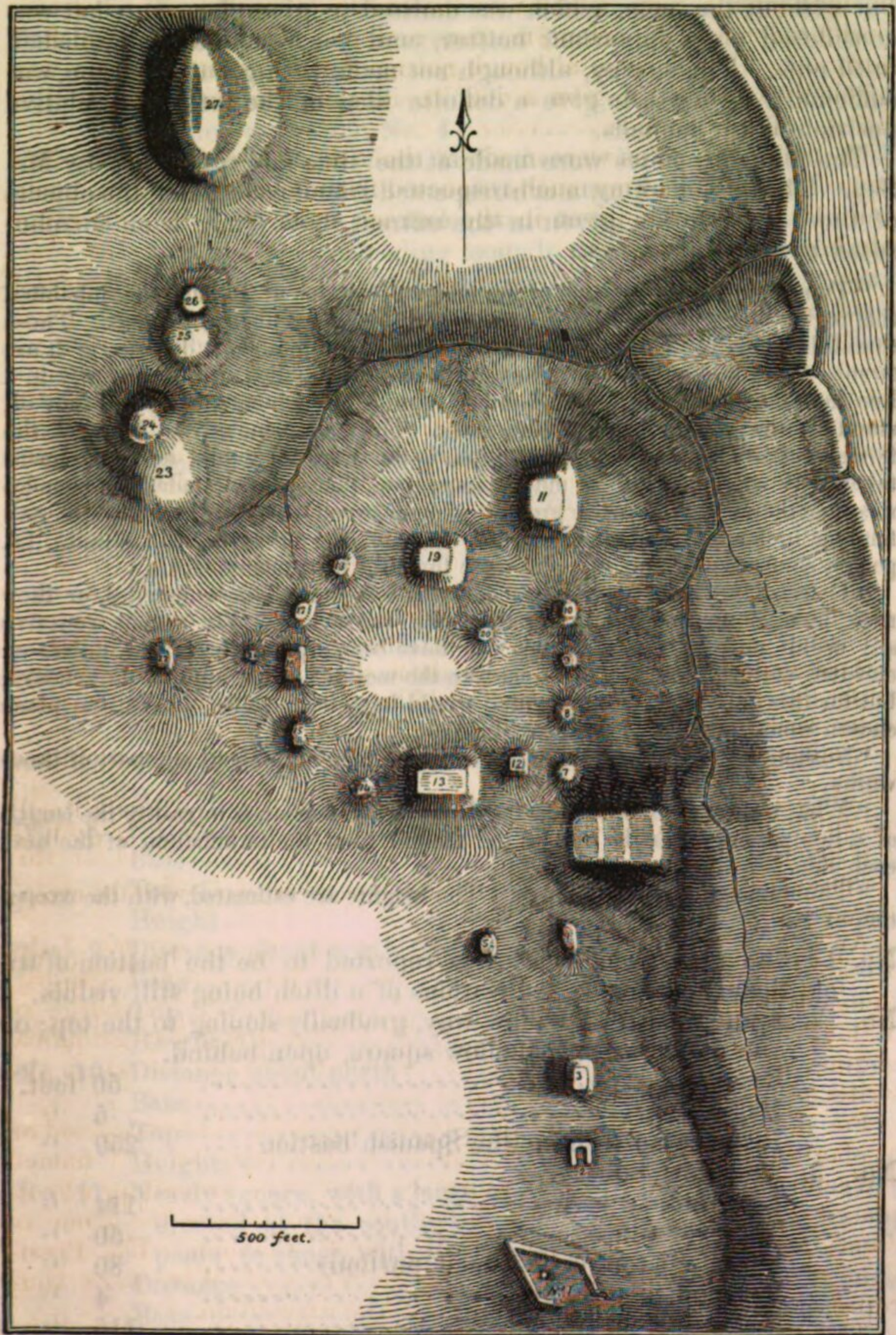
THE contents of an old portfolio will sometimes restore a lost fact which may be useful when connected with the observations of the day. So I hope it may be with the accompanying map of a series of mounds as they existed about forty years since, in the vicinity of the city of St. Louis; these mounds, like all other vestiges of the aborigines of our country, must soon pass away. The map may fix a remembrance of one period of their existence, and it is for this purpose that it is offered to the Institution without further apology.

An exploring expedition, destined for the upper waters of the Missouri river and the Rocky mountains, was fitted out at Pittsburg, Pennsylvania, in the spring of 1819. It was placed in charge of Major (now Colonel) S. H. Long, of the United States topographical engineers, and was accompanied by a scientific corps, of which the writer of this article was the junior member.

For the use of the expedition a small steamboat was constructed on a plan supposed to be well adapted to the purpose, and named "Western Engineer." It was furnished with two propelling wheels placed in the stern, one of which bore in large letters the name of James Monroe, and the other that of John C. Calhoun. The President of the United States and the Secretary of War were thus represented as the propelling power of the expedition.

This little steamer, the first which ascended the Missouri, and perhaps the only one known to history as bearing three names, produced a great impression on the sons of the forest as they beheld it struggling against wind and currents, belching forth flame and smoke from

the head of a serpent on its bow, and awaking the echo by its loud and stentorian breathing.



WATERS-SON, N.Y.

While this expedition was stopping at St. Louis to repair the steamer, in June, 1819, the late Mr. Thomas Say, also one of the expedition, and myself made a survey of the ancient mounds then in

the vicinity of the city. An account of these mounds was published in 1823 in a note to the first volume of Long's Expedition, page 59, but without the map, which was omitted to give place to what was considered more important matter, and has remained unpublished until now. The survey, although not made with great precision, was sufficiently accurate to give a definite idea of the form and relative position of the mounds.

The following notes were made at the time and published by Mr. Say. The opinion of my much-respected friend concerning the objects of these earthworks, given in the extract, have since been corroborated by other observers:

"Tumuli and other remains of the labors of nations of Indians that inhabited this region many ages since are remarkably numerous about St. Louis. Those tumuli immediately northward of the town and within a short distance of it are twenty-seven in number, of various forms and magnitudes, arranged nearly in a line from north to south. The common form is an oblong square, and they all stand on the second bank of the river. The statement given below of the forms, magnitudes, and relative position, is the result of actual admeasurement taken with care, and with as much accuracy as their present indefinite boundaries, together with the dense growth of underwood covering their surface, and tending to beguile and obstruct the vision of the observer, will admit. [A pocket compass and tape measure were the only instruments used.]

"It seems probable these piles of earth were raised as cemeteries, or they may have supported altars for religious ceremonies. We cannot conceive any useful purpose to which they can have been applicable in war, unless as elevated stations from which to observe the motions of an approaching enemy; but for this purpose a single mound would have been sufficient, and the place chosen would probably have been different.

"Nothing like a ditch or an embankment is to be seen about any part of these works.

"What we have called *base* in the following statement, is in reality the length of a line passing over the top of the mound from the termination of the base each side.

"The numbers refer to the map. The heights are estimated, with the exception of two."

No. 1 is the remains of what was reported to be the bastion of an old Spanish stockade, indications of a ditch being still visible.

No. 2. A square with a hollow way, gradually sloping to the top; or in other words, a hollow square, open behind.

Base	50 feet.
Height	5 "
Distance north from the Spanish bastion	259 "

No. 3. An oblong square.

Longitudinal base	114 "
Transverse base	50 "
Length at top (or flattened portion)	80 "
Perpendicular height	4 "
Distance from No. 2 north	115 "

No. 4. An oblong square.

Longitudinal base	84 "
(Flattened portion) top	45 "
Perpendicular height	4 "

No. 4.	Distance north from No. 3	251 feet.
Nos. 2, 3, and 4 are each about 33 ordinary paces from the edge of the second bank of the river.		
No. 5.	An oblong square; longitudinal base	81 "
	Top	35 "
	Perpendicular height	4 "
	Distance west from No. 4	155 "
No. 6.	Different in form from the others. It is called the <i>Falling Garden</i> , and consists of three stages, all of equal length, and of the same parallelogramic form. The superior stage, like the five succeeding mounds, is bounded on the east by the edge of the second bank of the river. The second and third stages are in succession on the declivity of the bank, each being horizontal, and are connected with each other, and with the first, by an abruptly-oblique descent.	
	Longitudinal base	114 feet.
	Top or flat portion	88 "
	Transverse base of the first stage	30 "
	height of the first stage	5 "
	Declivity to the second stage	34 "
	Transverse surface of the second stage	51 "
	Declivity to the third stage	30 "
	Transverse surface of third stage	87 "
	Declivity to the natural slope (on the east) ..	19 "
No. 7.	Like the three succeeding ones, conical.	
	Distance northward from No. 6	95 "
	Base	83 "
	Top	34 "
	Height	4½ "
No. 8.	Distance about north from No. 7	94 "
	Base	98 "
	Top	31 "
	Height	5 "
No. 9.	Distance about north from No. 8	70 "
	Base	114 "
	Top	56 "
	Height	16 "
No. 10.	Distance about north	74 "
	Base	91 "
	Top	34 "
	Height	8 or 10 "
No. 11.	Nearly square, with a large area on the top; (a brick house is erected at the southwest corner.) The eastern side appears to range with the preceding mounds.	
	Distance	158 feet.
	Base	179 "
	Top	107 "
	Height, west side, say	5 "
	Height, south side	11 "
	Height, east side	15 or 20 "

No. 12.	Nearly square, westwardly, a little north from No. 7, and distant from it.....	30 feet.
	Base.....	129 "
	Top.....	50 "
	Height.....	10 "
No. 13.	A parallelogram placed transversely, with respect to the group.	
	Distance.....	30 feet.
	Distance from No. 5 north 10 west.....	350 "
	Longitudinal base.....	214 "
	Top.....	134 "
	Transverse base.....	188 "
	Top.....	97 "
	Height.....	12 "
No. 14.	A convex mound, west.....	55 "
	Base.....	95 "
	Height.....	56 "
No. 15.	Together with the succeeding ones, more or less square.	
	Distance northwest.....	117 feet.
	Base.....	70 "
	Height.....	4 "
No. 16.	Distance north 10 east.....	103 "
	Base.....	124 "
No. 17.	Distance north.....	78 "
	Base.....	82 "
No. 18.	Distance north northeast.....	118 "
	Base.....	77 "

The mounds from 14 to 18, inclusive, are so arranged as to form a curve, which, when continued, terminates at the larger mounds Nos. 15 and 19.

No. 19.	A large quadrangular mound, placed transversely, and with No. 13, ranging in a line nearly parallel to the principal series, (from 2 to 11.)	
	Distance north northwest from No. 13.....	484 feet.
	Distance east northeast from No. 18.....	70 "
	Base.....	187 "
	Top.....	68 "
	Height (by measurement).....	23 "
No. 20.	A small barrow, perhaps two feet high, and of proportionably rather large base, say.....	15 or 20 feet.
No. 21.	A mound similar to the preceding, same height, west of No. 16, base.....	25 feet.
No. 22.	Quadrangular, distance west from No. 16...	319 "
	Base.....	73 "
No. 23.	A mound of considerable regularity, but owing to the thickness of the bushes we cannot at present satisfy ourselves of its being artificial, though from its corresponding with No. 25, we suppose it to be so.	
No. 24.	Appears to be an irregular mound ten or twelve feet high, and one hundred and forty-five feet base.	

No. 25. Distant north 10 east one hundred and fourteen feet, and following this course one hundred and thirty-two feet we arrive at an elevation on its margin, as is also the case with No. 24, and which we have numbered 26.

No. 26. Of which the base is eighty-nine feet and height ten or twelve. It is distant W.NW. from No. 19, 538 feet.

No. 27. Is the largest mound, of an elongated-oval form, with a large step on the eastern side, distance north from No. 26 1,463 feet.*

Longitudinal base 319 "

Longitudinal top 136 "

Transverse base 158 "

Transverse top 11 "

Step transversely 79 "

Height by measurement 34 "

At the distance of a mile to the westward is said to be another large mound.

On the summit of No. 27 are found several graves. "We opened five of them, but in one only were we fortunate in finding anything interesting, and all that this contained was a solitary tooth of a species of rat, together with the vertebræ and ribs of a serpent of moderate size and in good preservation; but whether the animal had been buried by the natives, or had perished there after having found admittance through some hole, we could not determine." These graves are similar to many found on the hills in the neighboring country, and evidently contained the relics of a more modern people than those who erected the mounds. "They do not rise above the general surface, but their presence is ascertained by the vertical stones which enclose them and project a little at either end of the grave. When the included earth and the numerous horizontal flat stones are removed, we find the sides neatly constructed of long flat stones vertically implanted and adapted to each other, edge to edge, so as to form a continuous wall. The graves are usually three or four feet, though sometimes six feet in length."

The city has long since been extended over these mounds, and although the marks of the sites of some of the larger are still seen, all vestiges of the greater number have been obliterated.

* The relative position of this mound could not be correctly given on the map without increasing the length to an inconvenient extent. Its true relative place would be considerably beyond the northern margin of the map.

INSTRUCTIONS
FOR
ARCHÆOLOGICAL INVESTIGATIONS IN THE U. STATES.

PREPARED FOR THE SMITHSONIAN INSTITUTION BY GEORGE GIBBS.

THE Smithsonian Institution being desirous of adding to its collections in archæology all such material as bears upon the physical type, the arts and manufactures of the original inhabitants of America, solicits the co-operation of officers of the army and navy, missionaries, superintendents, and agents of the Indian department, residents in the Indian country, and travellers to that end.

CRANIA.

Among the first of these desiderata is a full series of the skulls of American Indians.

The jealousy with which they guard the remains of their friends renders such a collection in most cases a difficult task, but there are others in which these objects can be procured without impropriety. Numerous tribes have become extinct, or have removed from their former seats; the victims of war are often left where they fall; and the bones of the friendless and of slaves are neglected. Where, without offence to the living, acquisitions of this kind can be made, they will be gladly received as an important contribution to our knowledge of the race.

Various methods of disposing of the dead have obtained among different tribes, as burning, burial, deposit in caves, in lodges, beneath piles of stone, and in wooden sepulchres erected above ground, placing on scaffolds or in canoes, and attaching to the trunks of trees. In many instances the bones, after a season, are collected together and brought into common cemeteries. Where the first mentioned form, that of burning, is followed, we must, of course, look to chance for the preservation of the remains. This method is, however, more rare than the others.

It is requisite, for the purpose of arriving at particular results, that the most positive determination be made of the nation or tribe to which a skull belongs. In extensive prairie countries, hunted over or traversed by various tribes, or where, as on the Pacific coast, several tribes and even stocks inhabit a district of limited extent, this is often difficult, or even impossible. Unless, therefore, information of a direct nature is obtained, the collector should be guarded in assigning absolute nationality to his specimens. It will be better to state accurately the locality whence they are derived, and the owners or frequenters of the neighborhood, to one of which it is

likely to belong. Where several specimens are collected they should be numbered to correspond with a catalogue in which the above points are mentioned, as also whether they were found in a grave or other place of deposit, with its description, the character of the ornaments and utensils placed with it, and whether it was in its original place or had been assembled with others. Finally, it should be ascertained if the tomb be one of existing or recent inhabitants of the country, or of one more ancient and preceding, such, for example, as the mound builders of the Ohio, and, in this latter case, if the remains are those of the original inhabitant, or have been since deposited. In this the character of the articles buried with the body will often furnish a clue. The same precaution should be adopted where tribes have been removed to reservations not on their original ground. In short, where any doubt exists in the mind of the collector, all those circumstances should be examined into which, in the absence of direct testimony, will facilitate a conclusion as to origin.

Among some nations, it may be mentioned in this connexion, it is the custom to marry out of the tribe as a matter of policy. Skulls of women found in the cemeteries of one of these would therefore very probably belong to an adjoining tribe, and it may happen of an entirely different stock. In such cases, too, there can be no certainty that the men themselves are of the pure blood of one race, and it is important to ascertain if this custom exists among those tribes where flattening or altering the head is common to *both* sexes; particular suspicion should attach to any having the skull unaltered. This process is usually a mark of rank, or at least of freedom, and the skull, if found in a burial place or well-marked receptacle, may almost be assumed to be that of a stranger; if neglected it is probably that of a slave. But as slaves were often buried with their owners, even this is not a positive conclusion. Among some of the Pacific tribes, however, compression of the head is confined to females, or is, at any rate, only carried to extent by them. Slaves are sometimes of the same tribe with their owners, but they are more frequently purchased from others, and it should be noted that on the Pacific the course of the trade has been from south to north.

In order to ascertain whether differences of form exist among different stocks, the accumulation of as many specimens as possible of each tribe is desirable, and duplicates moreover afford the means of further collections by exchange.

Those skulls which have been altered in shape possess a certain interest in themselves, though they are in other respects disadvantageous for comparison. The process, in different forms, has once obtained more widely than at present, several tribes in the southern States, as the Natchez, &c., having been addicted to it. Two methods are still employed in North America: that of flattening the head by pressure on the forehead, as practiced among the Chinooks and other tribes in Oregon and Washington Territory, and that of elongating it, peculiar to a few on the northern end of Vancouver island.

SPECIMENS OF ART, ETC.

Another department to which the Institution wishes to direct the attention of collectors is that of the weapons, implements, and utensils, the various manufactures, ornaments, dresses, &c., of the Indian tribes.

Such a collection may naturally be arranged under three periods. The first, that of the races which had already passed away before the discovery of the continent by Europeans, or whose extinction may be considered as coeval with that event; next, of the tribes who have disappeared with the settlement of the Atlantic States and the country between the Alleghanies and the Mississippi; and finally, the present time, or that of the yet existing nations confined to the northern and western portions of the continent and to Mexico.

It is among the last that the greatest variety exists, and of which it is especially important to make immediate collections, as many articles are of a perishable nature, and as the tribes themselves are passing away or exchanging their own manufactures for those of the white race. It is hardly necessary to specify any as of particular interest, for almost everything has its value in giving completeness to a collection. Among the most noticeable, however, are dresses and ornaments, bows and arrows, lances, war clubs, knives, and weapons of all kinds, saddles with their furniture, models of lodges, par-flesh packing covers and bags, cradles, mats, baskets of all sorts, gambling implements, models of canoes, (as nearly as possible in their true proportions,) paddles, fish-hooks and nets, fish spears and gigs, pottery, pipes, the carvings in wood and stone of the Pacific coast Indians, and the wax and clay models of those of Mexico, tools used in dressing skins and in other manufactures, metates or stone mortars, &c., &c.

In making these collections care should be taken to specify the tribes from whom they are obtained, and where any doubt may exist, the particular use to which each is applied. Thus, for instance, among the Californians one form of basket is used for holding water; another for sweeping the seeds from various plants and grasses; a third, as their receptacle during the process of collection; a fourth, for storage; still another, in which to pound them; again, one to boil the porridge made from the flour; and finally, others as dishes from which the preparation is eaten. It will also be desirable to ascertain the Indian names given to each article.

Of the second class the remains are also numerous, and are scattered through all the States east of the Mississippi in the form of axes, arrowheads, sinkers for nets, fleshing chissels, and other implements of stone, and in some cases fragments of rude pottery.

To the first class belong the only *antiquities* of America, and these are of various descriptions. They include the tools found in the northern copper mines; the articles enclosed in the mounds of Ohio and elsewhere; the images common in Kentucky and Tennessee, indicating, among other things, the worship of the Phallus; pottery,

the fragments of which are abundant in Florida, the Gulf States, and on the Gila, connecting an extinct with an existing art; and especially those specimens frequently disinterred in the Mexican States belonging to the era of Aztec or Toltecan civilization. It is especially important to ascertain the antiquity of these by careful observation of the circumstances under which they are discovered, in order not to confound ancient with modern utensils.

To this class also belong those articles found under conditions which connect archæology with geology, and which may be classed as follows:

1. The contents of shell beds of ancient date found on the sea-coasts and bays, often deeply covered with soil and overgrown with trees, among which, besides the shells themselves, are frequently implements of stone, bones of fish, animals, and birds used for food. The examination of these collections in Denmark and other countries of northern Europe has led to the discovery of remains belonging to a period when a people having no other implements than those of stone occupied the coast prior to the settlement there of the present race. It is possible that a similar investigation in America may take us back to a very remote period in aboriginal history.

2. Human remains, or implements of human manufacture, bones of animals bearing the marks of tools or of subjection to fire, found in caves beneath deposits of earth and more especially of stalagmites or stony material formed by droppings from the roof.

3. Spear and arrowheads, or other weapons and evidences of fire discovered in connexion with bones of extinct animals, such as the mammoth, fossil elephant, &c., among superficial deposits, such as salt licks, &c.

4. Implements of the same description found in deposits of sand and gravel or other like material exposed in bluffs or steep banks, such as have recently attracted the attention of European geologists.

In all these cases the utmost care should be taken to ascertain with absolute certainty the true relations of these objects. In the case of the shell banks, the largest trees, where any exist, should, if practicable, be cut down and the annual rings counted. Next the depth of the superincumbent deposit of earth should be measured and its character noted, whether of gravel, sand, or decomposed vegetable matter, as also whether it has been stratified by the action of water. Next the thickness of the shell bed should be ascertained and the height of its base above present high water mark, as also whether it exhibits any marks of stratification. Finally, the face of the bed having been uncovered, a thorough examination should be made, commencing at the top and carefully preserving everything which exhibits signs of human art, and noting the depth in the deposit at which they were discovered. Specimens of each species of shell should be collected, and all bones or fragments of them saved. Evidences of fire having been used should be watched for and recorded.

In the search of caverns the same system should be followed. First, the floor should be inspected for any recent remains either of men or animals; next, the superficial earth should be carefully removed over

a considerable space and thoroughly examined at various depths, the results, if any, being kept separate and marked accordingly. Where a stalagmitic deposit, such as is common in limestone caverns, forms the floor, it must be broken up and its thickness measured. The underlying materials should then be cautiously removed and sorted over, each layer being kept by itself, and where any remains are discovered the utmost precaution should be taken to determine their actual circumstances. If, for instance, they are bones of men, it should be ascertained whether the skeleton is entire and in a natural position, indicative of having been buried there, or scattered, as also its position relative to any other remains, whether under or over them; if of animals, whether they exhibit the marks of tools, and above all, evidences of the employment of fire. Every fragment of bone or other evidence of animal life should thus be preserved and marked with the order of its succession in depth.

The same precautions should be taken in the other cases mentioned, the conditions under which the objects are found, and the depth and character of covering of each being noted, and full sets of specimens sent for examination.

C I R C U L A R .

SMITHSONIAN INSTITUTION,

Washington, April 25, 1862.

The Smithsonian Institution is about to publish a communication on the ancient mining operations of the Lake Superior copper region, and is desirous of obtaining all the facts which have been discovered in later times in regard to this subject.

To attain this object, it is respectfully requested that all persons who have made original observations in regard to this matter will send an account of them to this Institution, and also specimens of implements, &c., of wood, stone, or copper which have been found in the vicinity of the ancient mines. These specimens will be carefully photographed and the originals, if requested, be returned to the owners.

Specimens and photographs of this kind, when collected together, afford the means by comparison of inferences of much interest in regard to the early history of man, particularly in connexion with the investigations of a similar kind now being prosecuted in Europe.

Mr. Jacob Houghton, mining engineer, Houghton county, Michigan, has kindly offered to take charge of any articles which may be presented or lent to the Institution, and they may be forwarded through him, or directly by Adams's Express, at the expense of this establishment.

JOSEPH HENRY,

Secretary Smithsonian Institution.

SUGGESTIONS

RELATIVE TO AN

ETHNOLOGICAL MAP OF NORTH AMERICA,

36 by 44 INCHES.

 BY LEWIS H. MORGAN, OF ROCHESTER, N. Y.

It should show—

I. Ocean boundaries: with the straits of Behring, the Aleutian islands, and the direction of the North Atlantic ocean currents.

II. River system, with the small tributaries complete.

III. Mountain ranges: to be indicated strongly. 1. Great ranges: these to be named; whether wooded or sterile, to be shown. 2. Cross or transverse ranges; the same.

IV. Profiles showing the elevations of the continent on every fifth parallel: to be drawn on the parallels, as now shown on the Smithsonian map.

V. Prairie and forest areas: 1. Arable prairie; to be shown as on Smithsonian map in Patent Office report, but with a further discrimination as follows: where there is a mixture of forest and prairie, as is the case particularly east of the Mississippi, if the forest predominates use one indication; if the prairie predominates use another. 2. Dry prairie; to be shown as on the Smithsonian map.

VI. Show the limits of the Colorado desert or basin, as far as they are known.

VII. Show the barren grounds west of Hudson bay.

VIII. Isothermal lines.

IX. Amount of annual precipitation in figures, for the purpose of showing the comparative wetness or dryness of different areas—no shading.

X. Boundary lines of States and Territories, with the initials of each.

XI. Location and distribution of the embankments and earthworks of the mound builders.

When the map is thus far completed by a draughtsman, there may be added as follows:

XII. Boundaries of the territories of the several stock Indian families, each one to be shaded with a different color: 1. Stock families. 2. Nations constituting each family, and their location. 3. Location of principal villages or settlements. 4. Geographical Indian names of rivers, lakes, and localities, &c.

XIII. Date of map: 1. East of the Mississippi and the Red River

of the North, the map to show the position of Indian nations A. D. 1600—1700. 2. Interior of the continent; the map to show the position of Indian nations A. D. 1700—1800. 3. West coast and Hudson's bay territory, A. D. 1800—1862. 4. Mexico and Central America, A. D. 1520—1600.

For ordinary geographical features, besides standard maps, consult—

For British America: Richardson's map, volume I; Sir John Richardson's *Journal of a Boat Voyage, &c.* Also, maps accompanying "Report on the Explorations of the Country between Lake Superior and the Red River Settlement," made to the Canadian Parliament; printed at Toronto, 1858.

West of the Mississippi, and the Pacific coast: United States military map.

For New Mexico, Texas, and northern States of Mexico: Bartlett's map; J. R. Bartlett's *Personal Narrative*, volume I; and for the course of the Colorado, Ives's *Colorado Report*.

For Central America: Squeir's map, in his work on Central America; also, United States map of same in House of Representatives "Report on Central American Affairs and Enlistment Question," 1856.

For Mexico, 1520—1600: consult Clavigero's map; Clingen's *History of the Conquest of Mexico*, volume VI; also, De Solis's map; De Solis's *Conquest of Mexico*, volume I.

NATURAL HISTORY.

LIST OF BIRDS ASCERTAINED TO INHABIT THE DISTRICT OF COLUMBIA, WITH THE TIMES OF ARRIVAL AND DEPARTURE OF SUCH AS ARE NON-RESIDENTS, AND BRIEF NOTICES OF HABITS, ETC.

BY ELLIOTT COUES AND D. WEBSTER PRENTISS.

FROM the central situation of the District of Columbia, with regard to the northern and southern sections of the country, together with the varied character of surface which it presents, it might be expected to possess a rich and interesting *avi-fauna*. Such has been found to be the case. It seems to be on the natural dividing line between the true northern and southern faunas, it being impossible to decide which takes precedence. Therefore, if we except a few peculiarly favored regions, we are enabled to present a more extensive list of species inhabiting the district than has been given for almost any other locality in eastern North America.

Though the number of birds which are resident throughout the year and those which breed here is considerable, they are few in comparison with those which pass through during their spring and autumn migrations, and remain for a longer or shorter time each season. The number of species, indeed, is not greater, but the individuals of each are very numerous. It is on this account that for a month or so during the spring and autumn—from about the 20th of April to the 20th of May, and from the 1st of September to the middle of October—the collector is so amply repaid for his pains, while at other times ornithologizing, except for some particular birds, is hardly worth the time and trouble. So numerous, indeed, are individuals of most of the migratory species that at the height of the season in spring we have collected, in a walk before breakfast, from forty to fifty specimens of various species of warblers, thrushes, flycatchers, finches, &c. As an instance of the number of birds which pass through the District on their way north to breed, compared with those which remain with us during the summer, may be cited the wood-warblers, or *Dendroicæ*. Of the twelve or thirteen wood-warblers found more or less abundantly in the spring and fall, only three are known to breed here. The same might be affirmed of other birds, as the thrushes, flycatchers, sandpipers, &c.

Though there is included in the list only those species which have been positively detected, there are some of which specimens have been obtained, and yet are not entitled to be considered as inhabitants of the District. These may be divided into three classes: First, those which visit us in severe winters, being driven south, out of

their usual range, by scarcity of food or other causes ; such are the *Nyctea nivea*, *Astur atricapillus*, *Collyrio borealis*, *Pinicola canadensis*, and others. Second, those which visit us in July and August, which are mostly the young of species breeding further south. Examples of these are to be seen in the *Rhynchops nigra*, some species of *Ardeidae*, &c. In the third class are to be ranged those whose appearance is totally accidental, dependent upon no fixed habit of the bird. Thus, species of *Thalassidroma* and *Puffinus* have been seen upon the Potomac, and a *Milvulus* (*M. forficatus*, probably) and the *Chamæpelina passerina* have been detected.

The great mass of the birds which pass through the district in their spring migrations do not stop to breed before reaching, at least, the New England States, and probably the majority go still further north, spreading through the Canadas and into British America to the region around Hudson's bay. Our regular winter visitants, as the *Junco hyemalis*, *Spizella monticola*, and the *Anatidæ* generally, do not usually stop much short of Labrador and the regions of that latitude. Other species, however, breed with equal readiness in almost any latitude. Thus the *Dendroica aestiva* is very common through the summer in the district, and doubtless even further south ; while it breeds also in very high latitudes in British America. During the winter these migratory species mostly retire to the Antilles, or into Central America, though many linger in the Gulf States along our southern border. The manner in which these extensive migrations are performed varies, doubtless, with different groups of birds, but it is very difficult to conceive how some weak and short-winged species can perform the immense journey. Some accomplish the distance by continually flying from forest to forest, and from hedge to hedge ; while others mount directly high into the air, and uninterruptedly continue their flight until hunger or weariness compels them to desist for awhile. This kind of migration is performed by some species wholly in the night time. Some of the small insectivorous birds have been noticed just at daybreak to descend from a great height, and after remaining motionless for sometime, as if to recuperate their energies, search diligently for food, and again resume their flight towards evening. The distance at which the notes of birds flying overhead can be heard is truly surprising. We have heard distinctly the mellow notes of the *Bob-o'-link* while the bird itself was entirely beyond our range of vision. The loud "honking" of wild geese while migrating is well known.

A circumstance which has considerable influence on the appearance of birds in the immediate vicinity is the presence of a large city. This is most strikingly shown in the case of the ducks and other water fowl, to which the attention of the sportsman is especially directed. The peculiar character of Chesapeake bay and its tributaries render them the favorite winter resort of nearly all the species of *Anatidæ* ; but the incessant persecutions to which these birds are subjected have effected a material diminution of their numbers, and caused a great part of them to retire to the bogs and inlets of more southern shores. The same is true, though less markedly, of various

shy and solitary birds, (as, for example, the *Hylatomus pileatus*,) which are gradually retiring with the clearing up of the forests to more mountainous and inaccessible regions. Nevertheless, the pertinacity with which some birds hold their ground is surprising. Thus the common partridge, though so continually persecuted by sportsmen, is still very numerous, even in the immediate vicinity of the city. A total change of habit by civilization, sometimes to be observed, is extremely interesting. There can be no doubt that before the settlement of the country the *Chaetura pelasgia* bred in hollow trees. This habit is now totally lost, the bird finding chimneys better suited to its wants. In like manner, the *Hirundo horreorum* now breeds altogether on the rafters and beams of barns and outhouses, while the *H. lunifrons* is gradually abandoning the sides of cliffs for the convenient situations afforded by the projecting eaves of buildings. The *Progne purpurea* always gives preference to the boxes now everywhere placed for its accommodation.

With these brief and very cursory remarks, which might be greatly extended did space permit, we proceed to the list of the species ascertained to inhabit the District. Our observations, from which the paper has been prepared, have extended over a period of nearly five years, during which all the time that could be spared from other occupations has been devoted to the study of birds. No species has been admitted which has not been actually detected in the District or its immediate vicinity. A few of whose existence there can be little or no doubt, are included in brackets, but still are not counted in the list. The date given for the arrival and departure of any bird is the mean of those observed during each successive year, since the appearance and disappearance of birds depend somewhat on the early or late advance of the season. It is regretted that the account of some of the water birds is so scanty and incomplete; but it is hoped that the very full details of most of the land birds will in a measure atone for the deficiency in this respect.

1. *Cathartes aura*, (Linn.,) Ill.—Turkey Buzzard. Permanent resident. Abundant. Not ordinarily gregarious, but collects in great numbers where offal of any description is exposed.

2. *Falco columbarius*, Linn. Pigeon Hawk. Rather rare, but few having been observed. Very shy. Sometimes exposed for sale in the market.

3. *Falco (Tinnunculus) sparverius*, Linn. Sparrow Hawk. Resident. Abundant. Generally found in open fields, about hedges, stumps, dead trees, &c.

4. *Astur atricapillus*, (Wils.,) Bon.—Goshawk. Very rare; only occasionally observed during the winter months.

5. *Accipiter cooperi*, Bon.—Cooper's Hawk. Resident. One of the most common hawks. Frequents chiefly open fields, searching for mice, small birds, &c.

6. *Accipiter fuscus*, (Gm.,) Bon.—Sharp-shinned Hawk. Resident. Very abundant, and the least shy of the hawks. Frequents hedges, ditches, brier patches, &c.

7. *Buteo borealis*, (Gm.,) Vieill.—Red-tailed Hawk. “Hen Hawk.” Resident. Abundant, especially in winter. Very shy and wary. Generally seen upon the largest trees in open fields.

8. *Buteo lineatus*, (Gm.,) Jard.—Red-shouldered Hawk. “Chicken Hawk.” Resident. Common. Habits much like those of the preceding, with which it is generally confounded by farmers.

9. *Buteo pennsylvanicus*, (Wils.,) Bon.—Broad-winged Hawk. Very rare; only occasionally observed. Specimens have been obtained in the market.

[*Nauclerus furcatus*, Vig.—Swallow-tailed Kite. As this bird goes considerably further north, it doubtless is to be found in the District, though we have never detected it.]

10. *Circus hudsonicus*, (Linn.,) Vieill.—Marsh Hawk. Resident. Very abundant. Generally seen over the marshes of the rivers, and the wet meadows north of the city.

11. *Aquila canadensis*, (Linn.,) Cass.—Golden Eagle. Apparently not rare; individuals being observed or taken almost every winter. Two specimens from this locality are now in the museum of the Smithsonian Institution.

12. *Halicetus leucocephalus*, (Linn.,) Savig.—Bald-headed Eagle. Not rare. Frequently seen sailing along over the river and perched upon stumps and snags upon the “flats.” Resident.

13. *Pandion carolinensis*, (Gm.,) Jard.—Fish Hawk. Osprey. Common. Seen over the Potomac and Anacostia rivers, and upon the branches of dead trees overhanging their banks.

14. *Scops asio*, (Linn.,) Bon.—Screech Owl. The most abundant as well as the smallest of the owls. This as well as the other owls are comparatively seldom seen on account of their nocturnal habits.

15. *Bubo virginianus*, (Gm.,) Bon.—Great Horned Owl. “Cat Owl.” Not common. Sometimes offered for sale in the market. Seldom seen, but its note often heard in woods, “making night hideous.”

16. *Otus wilsonianus*, Lesson.—Long-eared Owl. More abundant than the preceding. Seldom seen. Passes the day in hollow trees, thick clumps of pines, &c.

17. *Brachyotus cassinii*, Brew.—Short-eared Owl. Very abundant. Less shy than preceding, and apparently more confused by the light of day. Has been caught in the streets of the city.

18. *Syrnium nebulosum*, (Forst.,) Gray.—Barred Owl. Rare. But a few specimens observed. Found chiefly in day time in close cedar thickets, near farm houses.

19. *Nyctea nivea*, (Daud.,) Gray.—Snowy Owl. Very rare; only occasionally observed during the severest weather in winter.

[*Nyctale acadica* may very probably be hereafter detected.]

20. *Coccygus americanus*, (Linn.,) Bon.—Yellow-billed Cuckoo. “Rain Crow.” Very abundant, especially in spring and fall. Found chiefly in open woods. Breed plentifully. Fresh eggs are often found in a nest with young birds. Arrives May 1; departs late in September.

21. *Coccygus erythrophthalmus*, (Wils.,) Bon.—Black-billed Cuckoo. “Rain Crow.” Less abundant than the preceding, but not at all

rare. Habits similar to those of the Yellow-billed Cuckoo. Note not so harsh and prolonged. Summer resident. Arrives May 1; departs late in September.

22. *Picus (Trichopicus) villosus*, Linn.—Hairy Woodpecker. Permanent resident. Apparently rare. General habits in common with the woodpeckers. Not at all shy.

23. *Picus (Trichopicus) pubescens*, Linn.—Downy Woodpecker. "Sapsucker." Resident all the year. Abundant. Breeds plentifully. Frequents chiefly orchards, the dead undergrowth of boggy marshes, and the more open cleared woods.

24. *Sphyrapicus varius*, (Linn.,) Baird.—Yellow-bellied Woodpecker. Resident all the year. Abundant, particularly in the fall. Frequents chiefly high open woods, but often seen in thickets and tangled copses. Very fond of the berries of the sour gum.

25. *Hylatomus pileatus*, (Linn.,) Bd.—Pileated Woodpecker. "Cock of the Woods." "Black Log-Cock." Probably permanent resident. Rare, having retired from the immediate vicinity with the clearing off of the forests. Excessively shy and wary when seen.

26. *Centurus carolinus*, (Linn.,) Bon.—Red-bellied Woodpecker. Resident all the year; rather rare, and apparently more so than formerly.

27. *Melanerpes erythrocephalus*, (Linn.,) Sw.—Red-headed Woodpecker. "Red-head." Summer resident; high open woods and orchards. The most abundant of the woodpeckers. Arrives in spring usually the last week in April; leaves about the middle of September.

28. *Colaptes auratus*, (Linn.,) Sw.—Yellow-shafted Woodpecker. "Flicker." Resident all the year. Very abundant, particularly in spring and fall, when usually seen in straggling flocks. Breeds plentifully.

29. *Trochilus colubris*, Linn.—Ruby-throated Humming Bird. Summer resident. The only Humming Bird found here. Abundant, especially in the fall. Frequent exclusively the gardens in the city, patches of wild flowers, (golden rod, &c.,) along the sides of branches. Breed plentifully in the high woods. Arrive in spring about May 1, and remain till the first approach of cool weather.

30. *Chaetura pelagica*, (Linn.,) Steph.—Chimney Swift. Very abundant. Mostly seen in the city. Arrives second week in April; leaves towards the end of September.

31. *Antrostomus vociferus*, (Wils.,) Bon.—Whip-poor-will. Rare. Summer resident. Arrives first week in May; leaves third week in September. When suddenly startled flies off in a confused zigzag manner, unless during the breeding season.

32. *Chordeiles popetue*, (Vieill.,) Bd.—Night Hawk. "Bull Bat." Spring and autumn visitant. A few breed. Arrives May 1; leaves about October 6. Very abundant in the fall, especially just before its departure.

33. *Ceryle alcyon*, (Linn.,) Boie.—Kingfisher. Summer resident. Quite common along the banks of the rivers and Rock creek. Rather shy. Arrives the third week in March; leaves early in October.

34. *Milvulus* ———?—A *Milvulus* was seen, but, unfortunately,

not obtained, May 6, 1861, by Mr. C. Drexler. It was probably *M. forficatus*.

35. *Tyrannus carolinensis*, (Linn.,) Bd.—King Bird. “Bee Martin.” Summer resident; breeds plentifully, but the greater number go further north. Arrives second week in April; leaves late in September.

36. *Myiarchus crinitus*, (Linn.,) Cab.—Great-crested Flycatcher. Common summer resident, but most numerous in spring and autumn. Arrives third week in April; leaves third week in September.

37. *Sayornis fuscus*, (Gm.,) Bd.—Pewee. “Tom-tit.” Common summer resident, but more plentiful in spring and fall, since the greater number go further north to breed. Arrives the *first* of the spring visitants, about the first of March, and is very abundant for a month or more; in autumn becomes numerous about September 25, and does not leave till near the middle of October. Breeds in caves, about rocks, creeks, bridges, &c.

38. *Contopus virens*, (Linn.,) Cab.—Wood Pewee. Excessively abundant summer resident. Arrives last week in April; becomes very abundant in two weeks; leaves third week in September.

39. *Empidonax traillii*, (Aud.,) Bd.—Traill's Flycatcher. Rare; spring and fall visitant; perhaps a few breed. Times of arrival and departure much those of the succeeding.

40. *Empidonax minimus*, Baird.—Least Flycatcher. Spring and autumn visitant; none breed; rather common, most so in the spring. Frequents *exclusively* the margins of small streams and brooks, briar patches, &c. Arrives last week in April, remains about two weeks; arrives in autumn, third week in August, and remains till third week in September.

41. *Empidonax acadicus*, Gm., Bd.—Acadian Flycatcher. Common summer resident; the most abundant of the *Empidonaces*, and the only one that breeds here in any numbers. Arrives last week in April; leaves about September 25.

42. *Empidonax flaviventris*, Bd.—Yellow-bellied Flycatcher. Spring and autumn visitant; rather rare; perhaps some breed, specimens having been taken July 28. Arrives the first week in May; in autumn remains until third week in September. Found in same situations as *E. minimus*.

43. *Turdus mustelinus*, Gm.—Wood Thrush. “Wood Robin.” Summer resident. Many breed, but the greater number go further north. Arrives last week in April; leaves last week in October. Frequents thick and tangled woods, especially laurel brakes, &c., along the banks of Rock creek.

44. *Turdus pallasi*, Cab.—Hermit Thrush. Spring and autumn visitant; none breed. Arrives much the earliest of all the thrushes, and immediately becomes very abundant. Frequents chiefly open woods. Arrives third week in March, and remains until May; arrives in the fall the first week in October, and leaves about the third.

45. *Turdus fuscescens*, Steph.—Tawny Thrush. Spring and autumn visitant. Rather uncommon, being the rarest of the thrushes. Does not usually arrive until the first week in May; remains but a short

time; returns early in the fall. Frequents high open woods, but keeps near the ground. Shy and solitary.

46. *Turdus swainsoni*, Cab.—Olive-backed Thrush. Spring and autumn visitant; none breed. The most abundant of the thrushes, except perhaps *T. pallasi*. Have seen them in considerable flocks in the fall. Arrives the second week in April; remains but a short time. Returns in the fall, second week in September; remains till second week in October.

47. *Turdus aliciae*, Bd.—Gray-cheeked Thrush. Spring and autumn visitant; none breed. Apparently as abundant as *T. swainsoni*, more so than *T. fuscescens*. Found in similar situations with the former, with which its times of arrival and departure are nearly identical; perhaps fonder of swampy localities. (First shown to belong to the eastern Avi-fauna by ourselves. See Proc. Acad. Nat. Sci., Philada., Aug., 1861.)

48. *Turdus (Planesticus) migratorius*, Linn.—Robin. Permanent resident. A few breed, and a few remain during the winter; the greater part, however, proceed north in summer and south in winter. Most abundant in November and March. Sour gum and poke-berries (*Phytolacca decandra*) are their favorite food. Found in all localities. Many nest in the parks about the Capitol and President's House.

49. *Sialia sialis*, (Linn.,) Bd.—Blue Bird. Very abundant. Permanent resident. Disappears in severe weather in winter, but is found on warm, sunny days throughout that season, and becomes exceedingly numerous on the first opening of spring. Breeds plentifully in holes of trees and in boxes throughout the city.

50. *Regulus calendulus*, (Linn.,) Licht.—Ruby-crowned Kinglet. Spring and autumn visitant. Very abundant. None breed. In spring, from April 1 to May 10; in fall, through the month of October and first few days in November. Frequents orchards, thickets, copses, cedar patches, &c.; less frequently found in high woods. Is most numerous in the fall. Is in full song before it leaves. Spring migrations always embrace a number of both sexes, with the head perfectly plain.

51. *Regulus satrapa*, Licht.—Golden-crested Kinglet. Winter resident. Abundant from October 1 to latter part of April. None breed. Habits much the same as the preceding. Thick pine woods a favorite resort. Familiar and unsuspicious.

52. *Anthus ludovicianus*, (Gm.,) Licht.—Titlark. "Skylark." Winter resident. Abundant. Makes its appearance towards the end of October, and remains until April. Always found in restless straggling flocks, usually of considerable extent. Frequents open commons, bare meadows, ploughed fields, &c. Has a remarkable habit of frequently alighting on the roofs of houses and sheds. [Breeds in great numbers in Labrador.]

53. *Mniotilta varia*, (Linn.,) Vieill.—Black and White Creeper. "Sapsucker." Very common summer resident, but more abundant in spring and fall, as the greater number go further north to breed. Arrives first week in April, and is exceedingly numerous until May. Breeds in holes in trees. Generally found in high, open woods.

54. *Parula americana*, (Linn.,) Bon.—Blue Yellow-back Warbler.

Spring and autumn visitant. Exceedingly abundant from April 25 till May 15. Perhaps a few breed, as we have found them the first week in August. In fall abundant from August 25 to second week in October. Inhabits exclusively high, open woods, and usually seen in the tops of the trees, or at the extremities of the branches, in the tufts of leaves and blossoms. (*Albino* obtained.)

55. *Protonotaria citrea*, (Bodd.,) Bd.—Prothonotary Warbler. Exceedingly rare; perhaps only an accidental visitor. An individual seen in a swampy briar patch May 2, 1861. Probably its most northern range, if regularly found here.

56. *Gcothlypis trichas*, (Linn.,) Cab.—Maryland Yellow-throated Warbler. Very abundant summer resident, breeding in great numbers. Arrives April 25, becoming exceedingly numerous on its first appearance. Remains until October. Inhabits the densest briar patches, generally in swampy situations. Never seen in high woods, seldom in orchards or hedgerows. Associates with *Cistothorus palustris*, in the *Zizania aquatica* marshes. Nest on ground.

[*G. philadelphia* is undoubtedly an inhabitant of the District.]

57. *Oporornis agilis*, (Wils.,) Bd.—Connecticut Warbler. Rather uncommon in the fall, during the month of October. Excessively rare in spring; we never have seen it in that season. Frequents old buckwheat and corn fields, searching for food among the dry, rank weeds; also low thickets in swampy places.

58. *Oporornis formosus*, (Wils.,) Bd.—Kentucky Warbler. Rare. Found chiefly in low woods with thick undergrowth, ravines, &c. Very silent, but not shy. A few breed here.

59. *Icteria viridis*, (Gm.,) Bon.—Yellow-breasted Chat. Summer resident, breeding very abundantly. Arrives the last week in April, leaves about the middle of September. Frequents exclusively most dense and impenetrable briar patches. Males exceedingly shy and difficult to procure until the females commence incubation, when they are quite the reverse.

60. *Helminthus vermivorus*, (Gm.,) Bon.—Worm-eating Warbler. Rather uncommon summer resident, breeding sparingly. Arrives first week in May, remains till third week in September. Slow and sedate in its movements.

61. *Helminthophaga chrysoptera*, (Linn.,) Cab.—Golden-winged Warbler. Spring and autumn visitant. Very rare.

62. *Helminthophaga pinus*, (Linn.,) Baird.—Blue-winged Yellow Worm-eating Warbler. Spring and autumn visitant. Very rare.

63. *Helminthophaga ruficapilla*, (Wils.,) Bd.—Nashville Warbler. Spring and autumn visitant. Rare.

64. *Helminthophaga peregrina*, (Wils.,) Cab.—Tennessee Warbler. Spring and autumn visitant. Very rare.

[Our observations warrant the belief that all the *Helminthophagæ* are exceedingly rare. Though the four species given have been detected, the data with regard to their arrival and departure have not been ascertained.]

65. *Seiurus aurocapillus*, (Linn.,) Sw.—Golden-crowned Wagtail. Exceedingly abundant summer resident. Arrives April 12; for about two weeks keeps perfectly silent, hiding in the thickets and

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laurel brakes, (*Kalmia latifolia*,) so that its loud, harsh notes are not heard until the first of May, when they fill the woods, greatly to the annoyance of the collector searching for rarer and more retiring species. Found in high woods, especially where there is an undergrowth. Is *not* aquatic in any sense, but keeps on the ground rustling among the dry leaves for insects, and when disturbed flies to the nearest tree.

66. *Seiurus noveboracensis*, (Gm.,) Nutt.—Water Wagtail. Quite common in spring and fall; also breeds sparingly, having been found in July. Arrives in spring about May 1. Is eminently aquatic; swampy thickets, thick gloomy woods interspersed with puddles, where it associates with *Rhyacophilus solitarius*, are favorite resorts.

67. *Seiurus ludovicianus*, (Vieill.,) Bon.—Large-billed Water Wagtail. This bird, generally considered so rare, we have found to be not at all uncommon at certain seasons in particular localities. From the 20th of April to the 10th of May it may always be obtained, by an acute collector, in the dense laurel brakes which border the banks of and fill the ravines leading into Rock creek and Piney branch. We think we have seen it in June, which would prove it to breed here, as is, indeed, very probable. We have not detected it in the fall. It is usually very shy, darting at once into the most impenetrable brakes; but we have sometimes seen it quite the reverse, and have shot a pair, one after the other, as they sat in full view before me unconcernedly wagging their tails. We have nearly always found it in *pairs*, even as early as April 20. Its note is a sparrow-like chirp, like that made by striking two pebbles together; but it has also a loud and most beautiful and melodious song, the singularity of which first drew our attention to it.

68. *Dendroica virens*, (Gm.,) Bd.—Black-throated Green Wood-warbler. Spring and autumn visitant. None breed. In spring, from May 1 to 20; in fall, from September 7 to October 1. High open woods. Abundant.

69. *Dendroica canadensis*, (Linn.,) Bd.—Black-throated Blue Wood-warbler. Like the preceding, but rather less numerous.

70. *Dendroica coronata*, (Linn.,) Gray.—Yellow-rumped Wood-warbler. Winter resident. Exceedingly abundant. Arrive second week in October and remain until second week in May. Molt during the whole month of April, but before they leave are in full spring dress, though they have no song here. Most abundant in April and October, less so in depth of winter. Fond of hedges, orchards, copses, &c., but found everywhere. (*Albino* obtained.)

71. *Dendroica blackburniae*, (Gm.,) Bd.—Blackburnian Wood-warbler. Spring and autumn visitant. None breed. In spring, from May 1 to 20; in fall, from September 1 to 25. High open woods. Common.

72. *Dendroica castanea*, (Wils.,) Bd.—Bay-breasted Wood-warbler. Spring and autumn visitant. None breed. May 1 to 20; September 1 to 30. More abundant in fall than in spring. High open woods; sometimes laurel brakes, &c.

73. *Dendroica pinus*, (Wils.,) Bd.—Pine-creeping Wood-warbler. Summer resident. Arrives early in March, and stays until October.

Not very abundant at any time, and breeds but sparingly. High open woods. Pine and spruce forests.

74. *Dendroica pennsylvanica*, (Linn.,) Bd.—Chestnut-sided Wood-warbler. Spring and autumn visitant. None breed. In spring, from May 1 to 25; in fall, from September 1 to 20. High open woods. Abundant.

75. *Dendroica striata*, (Forst.,) Bd.—Black-poll Wood-warbler. Spring and autumn visitant. None breed. In spring, from May 7 to June 1; in fall, September 7 to second week in October. Arrive latest in both spring and fall, and stay latest of all the migratory warblers. Are the most numerous at both seasons, but especially abundant in the fall. High open woods.

76. *Dendroica aestiva*, (Gm.,) Bd.—Summer Yellow Wood-warbler. Summer resident. Very abundant. Breeds in numbers throughout the city, placing the nest in the forks of garden and fruit trees. Arrives April 25; leaves early in September. Never found in high open woods with the other *Dendroicæ*, but frequents orchards, gardens, &c.; also swampy copses.

77. *Dendroica maculosa*, (Gm.,) Bd.—Black and Yellow Wood-warbler. Spring and autumn visitant. None breed. Arrives first week in May; remains till the third. In fall, from September 1 to October 7. High open woods. Abundant.

78. *Dendroica tigrina*, (Gm.,) Bd.—Cape May Wood-warbler. Exceedingly rare. A single specimen obtained September 12, 1859. Times of arrival and departure probably identical with those of *D. virens*, *canadensis*, &c.

79. *Dendroica superciliosa*, (Bodd,) Bd.—Yellow-throated Wood-warbler. Entirely accidental visitor. One specimen obtained in 1842, and now in Smithsonian collection.

80. *Dendroica discolor*, (Vieill.,) Bd.—Prairie Wood-warbler. Mostly spring and autumn visitant, being quite abundant during those seasons. A few, however, breed. Arrives earlier than most of the *Dendroicæ*, about April 20. Frequents almost exclusively cedar patches and pine trees, and has very peculiar manners and notes.

81. *Dendroica palmarum*, (Gm.,) Baird.—Yellow Red-poll Wood-warbler. Spring and autumn visitant. Rather rare. None breed. Arrives about May 1; in fall, late in September, and does not leave till middle of October, after all the other warblers but *Dend. coronata* have taken their departure. Frequents old corn and buckwheat fields, associating with various species of sparrows; differing in this respect from all others of its genus, and resembling *Oporornis agilis*.

[There are twenty-two species of *Dendroica* found in North America; of these, fourteen have been observed here. Not one is a permanent resident; three only (*D. pinus*, *aestiva*, *discolor*) breed; one (*D. coronata*) is a winter resident. Nine others are spring and fall visitants; of these, seven (*D. virens*, *canadensis*, *blackburniae*, *castanea*, *pennsylvanica*, *striata*, *maculosa*) do not differ materially in numbers, habits, or times of arrival and departure; one (*D. palmarum*) differs in times of arrival and departure, and very remarkably in habits; one (*D. superciliosa*) is an accidental visitor; one (*D. tigrina*) is exceed-

ingly rare. In addition, *Dendroica cærulea* is undoubtedly to be found here.]

82. *Myiodioides mitratus*, (Gm.,) Aud.—Hooded Warbler. Rare spring and autumn visitant. Perhaps some breed.

83. *Myiodioides pusillus*, (Wils.,) Bon.—Green Black-capped Flycatcher. Rare spring and autumn visitant. A few may breed.

84. *Myiodioides canadensis*, (Linn.,) Aud.—Canada Flycatcher. Spring and autumn visitant. Abundant. Frequents high, open woods, keeping mostly in the lower branches of the trees, and also the more open undergrowth of marshy places. Arrives the last week in April, and remains about two weeks; arrives in fall the first week in September, and stays until the fourth.

85. *Setophaga ruticilla*, (Linn.,) Sw.—Redstart. Chiefly spring and autumn visitant. But very few breed. Exceedingly abundant in spring from April 25 to May 20, and in fall from September 1 to 20; in all woody or swampy situations. Has a habit of running along little twigs sideways. Note very similar to that of *Dendroica æstiva*.

86. *Pyranga rubra*, (Linn.,) Vieill.—Scarlet Tanager. Spring and autumn visitant. A few breed. In spring, from first to last week in May; in fall, from September 1 to 20. Common, but only found in high, open woods.

87. *Pyranga æstiva*, (Linn.,) Vieill.—Summer Red Bird. Summer resident. Not abundant. Arrives May 1; leaves towards the latter part of September. Frequents entirely high woods, especially those that have much undergrowth.

88. *Hirundo horreorum*, Barton.—Barn Swallow. Exceedingly abundant summer resident. Arrives March 25, and remains until September 12. Breeds in barns, out-houses, &c.

89. *Hirundo lunifrons*, Say.—Cliff Swallow. Summer resident, but not so abundant as preceding, from scarcity of good breeding places. Arrives last week in April, and remains until September 12.

90. *Hirundo bicolor*, Vieill.—White-bellied Swallow. Summer resident. Common, but not nearly so much so as *H. horreorum*. Arrives first week in April, and remains until third week in September.

91. *Cotyle (Cotyle) riparia*, (Linn.,) Boie.—Bank Swallow. Summer resident; the most abundant of the swallows; more so in fall than in spring. Arrives second week in May; departs about the middle of September. Eminently gregarious at all seasons. (*Albino* obtained.)

92. *Cotyle (Stelgidopteryx) serripennis*, (Aud.,) Bon.—Rough-winged Swallow. Summer resident. Rather rare. Arrives third week in April; leaves about the middle of September.

93. *Progne purpurea*, (Linn.,) Boie.—Purple Martin. Summer resident. Common. Arrives May 1; leaves first week in September. Many breed in the city and about the public buildings.

94. *Ampelis cedrorum*, (Vieill.,) Bd.—Cedar Waxwing. "Cedar Lark." Resident all the year. Abundant, particularly in the fall. Gregarious; almost always seen in flocks. Breeds latest of the summer residents, being in flocks as late as first week in June.

95. *Collyrio borealis*, (Bon.,) Bd.—Great Northern Shrike. Very

rare. Perhaps its southern limit. Seen only in severe winter weather.

96. *Vireo (Vireosylvia) olivaceus*, (Linn.,) Vieill.—Red-eyed Vireo. Summer resident. Found in all the high, open woods, from April 20 to September 25. The most abundant summer resident.

97. *Vireo gilvus*, (Vieill.,) Bon.—Warbling Vireo. Summer resident. Common. Arrives April 20, and remains until September 20. Frequents orchards, gardens, &c.; also, sometimes, low, thick swamps, and is especially abundant in the city, breeding in the high sycamore and poplar trees. Very seldom seen in woods with other vireos.

98. *Vireo (Lanivireo) solitarius*, (Wils.) Vieill.—Blue-headed Vireo. Spring and autumn visitant. (Some breed?) Arrives in spring April 25; leaves in fall October 20. Rarest of the vireos. Inhabits high, open woods, associating with *V. olivaceus* and *V. flavifrons*.

99. *Vireo (Lanivireo) flavifrons*, Vieill.—Yellow-throated Vireo. Summer resident. Abundant. Arrives April 25; remains until September 25. High, open woods. [*Vireo philadelphicus*, Cass., has never been actually detected, but is undoubtedly a very rare inhabitant of the District.]

100. *Mimus polyglottus*, (Linn.,) Boie.—Mocking Bird. Summer resident; but rare. Arrives April 25; departs about the middle of September.

101. *Mimus carolinensis*, (Linn.,) Gray.—Cat Bird. Summer resident. Exceedingly abundant. Found in all briar patches, along fences, and in thickets. Arrives in spring, the 3d week in April. Seems rather careless in concealing its nest, but very solicitous in protecting it. Departs about October 15.

102. *Harporhynchus rufus*, (Linn.,) Cab.—Thrasher. “French Mocking Bird;” “Sandy Mocking Bird.” Summer resident. Abundant. Arrives April 20, departs first week in October.

103. *Thriothorus ludovicianus*, (Linn.,) Bon.—Great Carolina Wren. Permanent resident. Not abundant, but most so in the summer; breeds in thick shrubbery, &c., about gardens; at other seasons is very shy and unfamiliar.

104. *Cistothorus (Telmatoodytes) palustris*, (Wils.) Bd.—Long Billed Marsh Wren. Summer resident. Arrives 3d week in April, leaves early in October. Very abundant, but only in certain localities; chiefly in the tracts of *Zizania aquatica*, which border the Potomac and Anacostia rivers [Cistothorus stellaris, though we have not been able to detect it, is doubtless found sparingly here.]

105. *Troglodytes ædon*, Vieill.—House Wren. Summer resident. Very abundant. Arrives April 15, leaves October 20. Breeds in boxes, out-houses, sheds, &c., and in orchards.

106. *Anorthura hyemalis*, (Wils.)—Winter Wren. Winter resident; rather uncommon. Arrives 1st week in October; remains until latter part of April. Frequents thick briar patches in dark woods, and the rocks and gullies about ravines and the sides of creeks.

107. *Certhia americana*, Bon.—Brown Creeper. Resident all the year. High, open woods. Abundant.

108. *Sitta carolinensis*, Gm.—White-bellied Nuthatch. Resident all the year. Very abundant, especially in fall. High, open woods.

109. *Sitta canadensis*, Linn.—Red-bellied Nuthatch. Winter resident. Arrives early in October, and remains until May. Rather rare. High, open woods, pine forests.

110. *Poliophtila cærulea*, (Linn.,) Sclat.—Blue-Gray Gnatcatcher. Summer resident. Arrives early, the first week in April; remains until latter part of September. Very abundant. Breeds in high, open woods; on its first arrival frequents tall trees on the sides of streams, orchards, &c.

111. *Lophophanes bicolor*, (Linn.,) Bon.—Permanent resident, but the greater number breed further north. Exceedingly abundant, especially in fall. Found in all situations.

112. *Parus atricapillus*, Linn.—Black-capped Chick-a-dee. Winter resident.

113. *Parus carolinensis*, Aud.—Carolina Chick-a-dee. Summer resident. (Owing to the close resemblance of these two species, we have not been able to detect their times of arrival and departure.)

114. *Eremophila cornuta*, (Wils.,) Boie.—Sky-lark. Winter resident. Arrives November 1; remains until April. Abundant. Inhabits, *exclusively*, bare level meadows and open commons. Eminently gregarious while here.

115. *Pinicola canadensis*, (Briss.,) Cab.—Pine Grosbeak. An exceedingly rare and probably only accidental visitant in severe winters.

116. *Carpodacus purpureus*, (Gm.,) Gray.—Purple Finch. Winter resident; very abundant; eminently gregarious. Arrives early in October, and remains until May. Stragglers are seen through the greater part of that month, but the majority depart as soon as the leaves are fully expanded. High, open woods; feeding chiefly (entirely in spring) on tender young buds. Are in full song before they take their departure.

117. *Chrysomitris tristis*, (Linn.,) Bon.—Gold Finch. "Briar Bird." Permanent resident. Exceedingly abundant. Breeds in numbers throughout the city, building in the crotches of poplars and maples. In winter gregarious, collecting in very large flocks about the 25th of September, and continuing so until May. Is in dull plumage as long as it remains in flocks.

118. *Chrysomitris pinus*, (Wils.,) Bon.—Pine Finch. Winter resident; rather uncommon; always found in flocks, frequently associating with *C. tristis*. Remains until May.

119. *Ægiothus linaria*, (Lin.,) Cab.—Common Red-poll Linnet. Rare, perhaps only accidental visitant in severe winters, when it appears in restless flocks of greater or less extent.

[The two species of Cross-bills — *Curvirostra americana* and *leucoptera*—undoubtedly sometimes make their appearance in severe winters, though we have not been able to ascertain the fact with certainty.]

120. *Plectrophanes nivalis*, Meyer.—Snow Bunting. Rare visitant in the depth of winter.

[*P. lapponicus* may very possibly visit us occasionally.]

121. *Passerculus savanna*, (Wils.,) Bon.—Savanna Sparrow. Chiefly spring and autumn visitant; a few doubtless winter in secluded situations; none breed. Very numerous on low, moist meadows and watery savannas from March 15 to first week in May, and from October 10 to November 10. Shy and retiring; associate in companies; keep always on the ground. Are in full song before they depart.

122. *Poocetes gramineus*, (Gm.,) Bd.—Bay-winged Bunting. Grass Finch. Resident all the year; very numerous in spring and autumn, less so in summer and winter. Frequent high dry fields, road sides, &c.

123. *Coturniculus passerinus*, (Wils.,) Bon.—Yellow-winged Sparrow. Summer resident; abundant. Arrives April 25; remains until October 15. Inhabits exclusively meadows and fields, keeping closely concealed in the grass. Usually solitary.

124. *Coturniculus henslowi*, (Aud.,) Bon.—Henslow's Bunting. Summer resident; exceedingly rare. (But one specimen known to have been obtained.)

125. *Zonotrichia leucophrys*, (Forst.,) Sw.—White-crowned Sparrow. Winter resident. Usually rare, but more plenty at irregular intervals; (e. g., in spring of 1861.) Remains until second week in May.)

126. *Zonotrichia albicollis*, (Gm.,) Bon.—White-throated Sparrow. Chiefly spring and autumn visitants, but numbers spend the winter in sheltered localities. Arrives early in October, and is exceedingly abundant during that month; becomes very numerous again the 1st of April and continues so until May 12. Mostly gregarious; frequent chiefly briar patches, hedges, roadsides, &c., in fall and winter, but in spring found on the ground in open woods. Sings both in fall and spring.

127. *Junco hyemalis*, (Linn.,) Sclat.—Snow Bird. Winter resident. Arrive in fall, October 10 or 12; soon become very numerous, and continue so until 15th of April. Stragglers seen till May. Found everywhere; in pleasant weather keep close in thickets, ravines, &c., but in severe weather approach farm-houses and scatter through the city. Gregarious; in full song before they leave.

128. *Spizella monticola*, (Gm.,) Bd.—Tree Sparrow. The most abundant winter sparrow except *Melospiza melodia*. Arrives 1st of November and leaves 1st of April; shy and retiring; chiefly gregarious. Found in thickets, briar patches, &c. Sings all through the winter.

129. *Spizella socialis*, (Wils.,) Bon.—Chipping Sparrow. Summer resident. Semi-domesticated, like *Troglodytes aedon*; breeds in orchards, gardens, shrubbery, about porches, &c. Especially fond of building the nest in small cedar bushes. March 10 to October 10.

130. *Spizella pusilla*, (Wils.,) Bon.—Field Sparrow. Resident all the year; especially abundant in spring; less so in summer and autumn; only found in secluded situations in winter. In full song in spring and occasionally sings in fall. Gregarious, except during the breeding season. Breeds in small, isolated bushes in fields, near the ground. (*Albino* obtained.)

131. *Melospiza melodia*, (Wils.,) Bd.—Song Sparrow. Permanent

resident. Excessively abundant, especially in winter, when it associates in large companies in briar patches and along tangled borders of streams.

132. *Melospiza palustris*, (Wils.,) Bd.—Swamp Sparrow.—Chiefly spring and autumn visitant; arrive in spring last week in April; become abundant in the fall, second week in October; very secluded and retiring in habits. Gregarious in fall.

[*Melospiza lincolni* is, in all probability, an inhabitant of the District, though we have never succeeded in detecting it.]

133. *Passerella iliaca*, (Merrem,) Sw.—Fox-colored Sparrow. Chiefly spring and autumn visitant, though some spend the winter in sheltered situations. Abundant from November 1 to 30, and from March 1 to 30. Eminently gregarious; inhabits thickets and the densest briar patches and laurel brakes. Sing just before departing; none breed.

134. *Euspiza americana*, (Gm.,) Bon.—Black-throated Bunting. Summer resident. Arrives May 1; leaves towards the end of September. Inhabits open fields and meadows. Abundant, especially in the spring.

135. *Guiraca ludoviciana*, (Linn.,) Sw.—Rose-breasted Grosbeak. Rare. Summer visitant; seen only at intervals. Found in high, open woods; generally in small companies. Shy and difficult to procure.

136. *Guiraca caerulea*, (Linn.,) Sw.—Blue Grosbeak. Summer resident. Rather rare. Breeds in much the same places as does *Cardinalis virginianus*; at other times found in more open situations, orchards, sparse woods, &c. Arrives first week in May; departs about middle of September.

137. *Cyanospiza cyanea*, (Linn.,) Bd.—Indigo Bird. “Little Blue Bird.” Summer resident. Common. Arrives 1st of May; remains until second week in September. About orchards, edges of woods, meadows, &c.

138. *Cardinalis virginianus*, Bon.—Cardinal Grosbeak. “Red Bird.” Resident all the year. Abundant, but always shy and difficult to procure. Frequents only the thickest briar patches. Moults from middle of July till October.

139. *Pipilo erythrophthalmus*, (Linn.,) Vieill.—Towhe Bunting. “Marsh Robin.” Chiefly spring and autumn visitant; a few breed. Very abundant from April 25 to May 10, and from first to third week in October. Thickets, laurel brakes, &c.; partially gregarious.

140. *Dolichonyx oryzivorus*, (Linn.,) Sw.—Bob-o'-link. “Reed Bird.” Spring and autumn visitant. In spring distributed abundantly about orchards and meadows, even at that season generally in flocks, from May 1 to 15; in autumn frequent in immense flocks the tracts of *Zizania aquatica*, along the river; also cornfields, &c., from August 20 to October.

141. *Molothrus pecoris*, (Gm.,) Sw.—Cowpen Bird. “Cow Bird.” Summer resident. Not very common. Arrives second week in March; remains till October.

142. *Agelaius phoeniceus*, (Linn.,) Vieill.—Red-winged Black Bird. Resident nearly all the year; more abundant in spring and fall, especially the latter. Breed. Commence to flock over the tracts of

Zizania aquatica and the neighboring cornfields the first week in August. Arrive in small flocks early in March.

143. *Sturnella magna*, (Linn.,) Sw.—Meadow Lark. Field Lark. Resident all the year. Abundant. Collect in flocks, sometimes of great extent, and then are very shy. Old fields, meadows, &c.

144. *Icterus baltimore*, (Linn.,) Daudin.—Baltimore Oriole. Chiefly spring and autumn visitant, though many breed. Arrives the first week in May, and remains until latter part of September. Orchards; high, open woods.

145. *Icterus spurius*, (Linn.,) Bon.—Orchard Oriole. Summer resident. Not uncommon. Arrives first week in May; remains till latter part of September. Orchards, meadows, and high, open woods.

146. *Scolecophagus ferrugineus*, (Gm.,) Sw.—Rusty Grackle. "Black Bird." Winter resident. Abundant. Strictly gregarious. Arrives third week in October; remains until April. Swampy localities; also ploughed fields, &c.

147. *Quiscalus versicolor*, (Linn.,) Vieill.—Purple Grackle. "Crow Black Bird." Summer resident. Abundant, but more particularly so in spring and fall. Arrives about March 15; departs late in October.

148. *Corvus americanus*, Aud.—Common Crow. Resident all the year. Very abundant. Found everywhere. Gregarious in winter. Less abundant during the breeding season.

149. *Corvus ossifragus*, Wils.—Fish Crow. Resident all the year. Abundant. Less wary and suspicious than the preceding, and more confined to the borders of the rivers. Confounded with the preceding generally.

150. *Cyanura cristata*, (Linn.,) Sw.—Blue Jay. "Jay Bird." Resident all the year. Abundant, especially in fall and winter, when it is partially gregarious. Found everywhere.

151. *Ectopistes migratoria*, (Linn.,) Sw.—Wild Pigeon. Make their appearance in flocks at irregular intervals throughout the fall, winter, and early spring months.

152. *Zenaidura carolinensis*, (Linn.,) Bon.—Carolina Turtle Dove. "Dove." Permanent resident. Not very abundant. Sometimes collect in large flocks in the fall, when they frequent cornfields, &c.

153. *Chamæpelis passerina*, (Linn.,) Sw.—Ground Dove. An entirely accidental visitor from the south.—(One specimen obtained, now in museum S. I.)

154. *Meleagris gallopavo*, Linn.—Wild Turkey. Regularly seen in the markets all through the winter, though not often found in the immediate vicinity of the city. Remains all the year in the neighboring districts.

155. *Bonasa umbellus*, (Linn.,) Stephens. Ruffed Grouse. "Pheasant." Resident all the year. Apparently not uncommon, but frequent mostly impenetrable laurel brakes, &c., and are difficult to procure.

156. *Ortyx virginianus*, (Linn.,) Bon.—American Partridge. "Partridge." Resident all the year. Still abundant in the immediate vicinity of the city during the late fall and winter months.

157. *Grus canadensis*, (Linn.,) Temm.—Sand-hill Crane. Exceedingly rare; perhaps only accidental. (Specimen obtained.)

158. *Garzetta candidissima*, (Jacq.,) Bon.—Snowy Heron. Not uncommon about the marshes of the Potomac in early fall.

159. *Herodias egretta*, (Gm.,) Gray.—White Egret. Occasionally seen along the river in the late summer and early fall months.

160. *Ardea herodias*, Linn.—Great Blue Heron. "Blue Crane." Found at intervals during the summer and early autumn along the marshes bordering the river.

161. *Florida cærulea*, (Linn.,) Bd.—Little Blue Heron. Rare, perhaps only accidental, towards the end of summer. (Specimen obtained.)

162. *Ardetta exilis*, (Gm.,) Gray.—Least Bittern. Summer resident; rather uncommon. Arrives early in May; departs late in September. Found chiefly in the *Zizania aquatica* marshes.

163. *Botaurus lentiginosus*, Steph.—Bittern. "Indian Hen." "Sage Hen." Resident all the year. Common. Only heron that winters here.

164. *Butorides virescens*, (Linn.,) Bon.—Green Heron. "Fly-up-the-creek." Summer resident. Most abundant of the herons. Arrives 1st of May; remains until middle of September. Numerous about Rock creek and the marshes and creeks of the Potomac.

165. *Nyctiardea gardeni*, (Gm.,) Bd.—Night Heron. Rare; seen occasionally during the latter part of summer.

166. *Charadrius virginicus*, Borck.—Golden Plover. "Bull-head Plover." Spring and autumn visitant. Passes quickly through in early spring; is more numerous in autumn, during latter part of October and whole of November, about fields, ploughed land, &c.

167. *Ægialitis (Oxyechus) vociferus*, (Linn.,) Cass.—Killdeer Plover. "Killdee." Resident all the year, or nearly so. Most numerous early in spring and late in autumn; generally seen in flocks, on meadows, commons, ploughed lands, &c.

[*Ægialitis semipalmatus* is undoubtedly an inhabitant of the District.]

168. *Philohela minor*, (Gm.,) Gray.—Woodcock. Resident all the year. Common. Frequent chiefly "Woodcock brakes" and moist cornfields; and in early spring low woods and thickets.

169. *Gallinago wilsonii*, (Temm.,) Bon.—Wilson's Snipe. "English" or "Jack" Snipe. Spring and autumn visitants. Abundant. Pass through early in the spring and return in the fall the first week in September, and remain about two weeks. In flocks in the fall.

[*Macrorhamphus griseus*, though we have not detected it, is doubtless an inhabitant of the District.]

[*Micropalama himantopus* may very possibly be hereafter detected.]

170. *Actodromas maculata*, (Vieill.,) Cass.—Pectoral Sandpiper. "Grass Snipe." Spring and autumn visitant. Rarely seen in spring. Not uncommon in autumn from September 25 to November. Low, moist, grassy meadows, boggy commons, &c. Seen singly as often as in flocks.

171. *Actodromas minutilla*, (Vieill.,) Coues.—Least Sandpiper.

Spring and autumn visitant. In spring from May 1 to 15; in fall from August 25 to October. In habits very similar to preceding.

172. *Ereunetes pusillus*, (Linn.,) Cass.—Semipalmated Sandpiper. Rare; perhaps accidental; occasionally met with in spring and fall along the banks of the river. [Possibly a second species, (*Ereunetes minor*, Gundl.)]

173. *Symphemia semipalmata*, (Gm.,) Hartl.—Willet. Rare; spring and autumn visitant.

174. *Gambetta melanoleuca*, (Gm.,) Bon.—Greater Tell-tale Tatler. "Yellow-shanks Plover." Spring and autumn visitant. Common. In spring, from May 1 to 15; in autumn, middle of September to November. Generally seen singly or two or three together. Banks of the rivers, boggy meadows, commons intersected with pools, &c.

175. *Gambetta flavipes*, (Gm.,) Bon.—Lesser Tell-tale Tatler. "Yellow-shanks Plover." Identical in times of appearance and in habits with preceding.

176. *Rhyacophilus solitarius*, Wils.—Solitary Tatler. Spring and autumn visitant; very abundant, especially in spring. May 1 to 15, and August 25 to October 15. Very familiar and unsuspicious; decidedly gregarious, both in spring and fall. Frequents ditches and puddles, in low, boggy commons, &c.

177. *Tringoides macularius*, (Linn.,) Gray.—Spotted Sandpiper. "Sand Snipe." Summer resident; very abundant in spring. The only sandpiper that breeds. Arrives April 20 and remains through greater part of September. Found chiefly on Rock creek and banks of the river.

178. *Actiturus bartramius*, (Wils.,) Bon.—Bartram's Tatler. Grass Plover. Field Plover. Summer resident; rare. Found altogether on high, open fields and ploughed lands.

179. *Numenius longirostris*, Wils.—Long-billed Curlew. Not uncommon. Spring and autumn visitant; remaining a very short time at each season. In fall, about the middle of September. Found in places similar to those which the Yellow-legs frequent.

180. *Rallus elegans*, Aud.—Fresh-water Marsh-hen. "King Ortolan." Found sparingly in early autumn in the marshes along the rivers, with the *P. carolina*.

181. *Rallus virginianus*, (Linn.)—Virginia Rail. Spring and autumn visitant. Very rare in the spring, and not abundant in the fall. Arrives in fall the last week in August; departs about the same time with the *P. carolina*.

182. *Porzana carolina*, Vieill.—Common Rail. Sora. Ortolan. Spring and autumn visitant. Rare in spring, but very abundant in fall from the last week in August until the first frost. Found exclusively in the marshes bordering the Potomac and Eastern Branch.

[*Porzana noveboracensis*, though not detected, is undoubtedly an inhabitant of the District.]

183. *Porzana jamaicensis*.—Black Rail. Very rare, perhaps only accidental, during the early fall. (Specimen seen by ourselves September, 1861.)

184. *Fulica americana*, Gm.—Coot. "Crow Duck." Spring and

autumn visitant; passing through early in the spring, and returning in the fall about the 1st of October. Very common in the fall.

185. *Cygnus americanus*, Sharpless.—American Swan. Winter resident. Not common. Seen sometimes on the river, and frequently exposed for sale in the market.

186. *Bernicla canadensis*, (Linn.,) Boie.—Canada Goose. Wild Goose. Winter resident. Common, but seen most frequently in the air, flying over. Arrive in fall just before the first approach of severe weather. Found in market through the winter.

187. *Anas boschas*, (Linn.)—Mallard. Very abundant winter resident. Found upon the Potomac and Anacostia rivers, and (more rarely) upon creeks and ponds.

188. *Anas obscura*, Gm.—Dusky Mallard. Black Mallard. Not rare. Habits same as those of preceding.

189. *Dafila acuta*, (Linn.,) Jenyns.—Pintail Duck. Sprig-tail. Winter resident. Common. Found mostly along the margins of the rivers, and sometimes inland. Arrive about the first of October.

190. *Nettion carolinensis*, (Gm.,) Baird.—Green-winged Teal. Winter resident. Abundant. Found chiefly along the marshes of the Potomac and Anacostia. Arrives sooner than most of the ducks, about the middle of September.

191. *Querquedula discors*, (Linn.,) Steph.—Blue-winged Teal. Winter resident. The most abundant of the ducks. Habits much as those of preceding.

192. *Chaulelasmus streperus*, (Linn.,) Gray.—Gadwall. Winter resident. Habits similar to those of the Mallard, with which it is often found associated, but it is less numerous.

193. *Mareca americana*, (Gm.,) Stephens.—Widgeon. Winter resident. Arrives in the fall about the first of October, and departs in spring during the month of April. Very abundant and not so difficult of approach as are most of the ducks.

194. *Aix sponsa*, (Linn.,) Boie.—Wood-duck. Summer Duck. Permanent resident; but more abundant in winter, being seldom seen in summer. Not very abundant at any time.

195. *Fulix marila*, (Linn.,) Bd.—Greater Black-head Duck. Winter resident. Not very abundant. Often exposed for sale in market, but not much esteemed for food.

196. *Fulix affinis*, (Forst.,) Bd.—Lesser Black-head Duck. Winter resident. Same as preceding.

197. *Fulix collaris*, (Donovan,) Baird.—Ring-neck Duck. Winter resident. Rare. Arrives in fall about the last week in September.

198. *Aythya americana*, (Eyton,) Bon.—Red-head duck. Winter resident. Very abundant. A common market duck, and frequently offered for sale as the canvas back. Found upon the "flats" of the rivers, and occasionally on inland marshes.

199. *Aythya vallisneria*, (Wils.,) Bon.—Canvas-back duck. Winter resident. At times exceedingly abundant. Highly prized by sportsmen and epicures. Habits much those of the preceding.

200. *Bucephala americana*, (Bon.,) Baird.—Golden-eye duck. Winter resident. Rather abundant. Frequently seen in the market.

201. *Bucephala albeola*, (Linn.,) Baird.—Buffel-headed duck; “Butter-ball.” Winter resident. More common than preceding. Arrive in fall, about the middle of September; leave in spring, the second week in April.

202. *Harelda glacialis*, (Linn.,) Leach.—Long-tailed duck.

203. *Melanetta velvetina*, (Cass.,) Baird.—Velvet duck.

204. *Pelionetta perspicillata*, (Linn.,) Kaup.—Surf duck.

205. *Oidemia americana*, Swainson.—Scoter duck.

(The four preceding birds do not properly belong to the fauna of the District, being strictly marine birds. They are found at the mouth of the Potomac, and ascend it as far as the salt water reaches. Their appearance in this immediate locality must, however, be considered accidental. They are all to be seen in the market during the winter.)

206. *Erismatura rubida*, (Wils.,) Bon.—Ruddy duck. Winter resident. Abundant. Frequently exposed for sale in the market, but not esteemed for food.

207. *Mergus americanus*, Cassin.—Goosander. “Fishing duck.” Winter resident. Not common. More frequently seen on creeks and millponds than on the rivers.

208. *Mergus serrator*, Linn.—Red-breasted merganser. “Fishing duck.” Winter resident. Rather more common than the preceding. Found in much the same situations.

209. *Lophodytes cucullatus*, (Linn.,) Reich.—Hooded merganser. Winter resident. Rather rare.

210. *Thalassidroma leachii*, Bon.—Leach’s Petrel. Accidental visitor. (Numbers were seen during a storm some years ago.)

211. *Puffinus*, —? A shearwater, probably *P. obscurus*, has been detected in the District.

212. *Larus smithsonianus*,* Coues.—Herring gull. “Sea gull.” Seen over the river through the winter. Not numerous. Exceedingly shy and wary.

213. *Larus delawarensis*, Ord.—Ring-billed gull. Seen about the river during the winter months. More numerous than the preceding.

214. *Chroicocephalus atricilla*, (Linn.,) Lawr.—Laughing gull. Occasionally seen during the late summer and early autumn months.

215. *Chroicocephalus philadelphia*, (Ord.,) Lawr.—Bonaparte’s hooded gull. More abundant than the preceding, being quite common. Remains here through the winter.(?)

216. *Sterna aranea*, Wils.—Marsh Tern. Rare; only occasionally seen during the late summer and early fall months, over the marshes bordering the river.

217. *Sterna wilsonii*, Bon.—Wilson’s Tern. An occasional visitor during the late summer and early fall months. [*Sterna forsteri* is undoubtedly to be found in the District.]

218. *Sterna frenata*, Gambel.—Least Tern. Not uncommon. Frequently seen over the marshes bordering the Potomac and Eastern Branch in August and September, and more rarely in spring.

219. *Hydrochelidon plumbea*, Wils.—Short-tailed Tern. “Little

* See Proc Acad. Nat. Sci., Philadelphia, June, 1862, p. 296.

Sea Gull." Less numerous than preceding, but found in similar localities and at much the same times.

220. *Rhynchops nigra*, Linn.—Black Skimmer. A rare, perhaps accidental, visitor during the summer. (Specimens seen by ourselves September 8, 1858, on the Potomac river.)

221. *Graculus dilophus*, Gray.—Double-crested Cormorant. A specimen has been detected.

222. *Colymbus torquatus*, Brunn.—Great Northern Diver. "Loon." Occasionally seen during the winter.

223. *Podiceps (Pedetaithya) holbolli*, Reinhardt.—Red-necked Grebe. Not uncommon on the Potomac during the winter months.

224. *Podiceps cristatus*, Lath.—Crested Grebe. "Water Witch." Found on the Potomac during the winter months.

225. *Podiceps (Dytes) cornutus*, Lath.—Horned Grebe. Common on Potomac in winter.

226. *Podilymbus podiceps*, (Linn.) Lawr.—"Dipper." "Water Witch." Abundant on the Potomac in winter. (We have not been able to ascertain the precise times of arrival and departure of the five preceding birds.)

The birds included in the preceding catalogue are now presented in sections to show at a glance those which are permanent, or summer, or winter residents, and those which are regular or accidental visitants. It is somewhat difficult to make out such an analytical table, from the fact that of some species undoubtedly to be classed as spring and autumn visitants a few individuals breed or pass the winter in secluded situations, and *vice versa* of those which regularly pass the summer or winter with us, many are more abundant in the spring and fall. We have endeavored to place each species in the class under which it most naturally falls, indicating irregularities of this sort in foot notes.

A.

PERMANENT RESIDENTS.

Cathartes aura.	Picus pubescens.	Cardinalis virginianus.
Falco sparverius.	Sphyrapicus varius.	Agelaius phoeniceus.
Accipiter cooperi.	Hylatomus pileatus.	Sturnella magna.
Accipiter fuscus.	Centurus carolinus.	Corvus americanus.
Buteo borealis.	Colaptes auratus.	Corvus ossifragus.
Buteo lineatus.	Turdus migratorius.	Cyanura cristata.
Buteo pennsylvanicus.	Sialia sialis.	Zenaidura carolinensis.
Circus hudsonius.	Ampelis cedrorum.	Bonasa umbellus.
Haliaetus leucocephalus.	Thriothorus ludovicianus.	Meleagris gallopavo.
Scops asio.	Certhia americana.	Ortyx virginianus.
Bubo virginianus.	Sitta carolinensis.	Botaurus lentiginosus.
Otus wilsonianus.	Lophophanes bicolor.	Ægialitis vociferus.
Brachyotus cassini.	Chrysomitris tristis.	Philohela minor.
Syrnium nebulosum.	Spizella pusilla.	Aix sponsa.
Picus villosus.	Melospiza melodia.	

B.

WINTER RESIDENTS.

Falco columbarius.	Ectopistes migratoria.	Erismatura rubida.
Aquila canadensis.	Chaulelasmus streperus.	Bucephala americana.

Anthus ludovicianus.
 Regulus satrapa.
 Dendroica coronata.
 Collyrio borealis.
 Anorthura hyemalis.
 Sitta canadensis.
 Parus atricapillus.
 Eremophila cornuta.
 Carpodacus purpureus.
 Chrysomitris pinus.
 Zonotrichia leucophrys.
 Junco hyemalis.
 Spizella monticola.
 Scolecophagus ferrugineus.

Mareca americana.
 Fulix marila.
 Fulix affinis.
 Fulix collaris.
 Aythya americana.
 Aythya vallisneria.
 Cygnus americanus.
 Bernicla canadensis.
 Anas boschas.
 Anas obscura.
 Dafila acuta.
 Nettion carolinensis.
 Querquedula discors.

Bucephala albeola.
 Mergus americanus.
 Mergus serrator.
 Lophodytes cucullatus.
 Larus smithsonianus.
 Larus delawarensis.
 Chroicocephalus philadelphia.
 Podiceps holböllli.
 Podiceps cristatus.
 Podiceps cornutus.
 Podilymbus podiceps.

C.

SUMMER RESIDENTS.

Pandion carolinensis.
 Coccyzus americanus.
 Coccyzus erythrophthalmus.
 Melanerpes erythrocephalus.
 Trochilus colubris.
 Chætura pelagica.
 Antrostomus vociferus.
 Ceryle alcyon.
 Tyrannus carolinensis.*
 Myiarchus crinitus.
 Sayornis fuscus.*
 Contopus virens.
 Empidonax acadicus.
 Turdus mustelinus.
 Mniotilta varia.*
 Geothlypis trichas.
 Icteria viridis.
 Seiurus aurocapillus.
 Seiurus noveboracensis.

Helmitherus vermivorus.
 Dendroica aestiva.
 Dendroica pinus.
 Dendroica discolor.
 Pyrrhula aestiva.
 Hirundo horreorum.
 Hirundo lunifrons.*
 Hirundo bicolor.*
 Cotyle riparia.
 Cotyle serripennis.
 Progne purpurea.
 Vireo olivaceus.
 Seiurus ludovicianus.
 Vireo flavifrons.
 Vireo gilvus.
 Mimus polyglottus.
 Mimus carolinensis.
 Harporhynchus rufus.
 Troglodytes ædon.
 Cistothorus palustris.

Poliophtila cærulea.
 Parus carolinensis.
 Poocetes gramineus.
 Coturniculus passerinus.
 Coturniculus henslowi.
 Spizella socialis.
 Euspiza americana.
 Guiraca ludoviciana.
 Guiraca cærulea.
 Cyanospiza cyanea.
 Molothrus pecoris.
 Icterus baltimore.*
 Icterus spurius.
 Ardea herodias.
 Garzetta candissima.
 Herodias egretta.
 Butorides virescens.
 Nyctiardea gardeni.*
 Tringoides macularius.*
 Actiturus bartramius.

* The greater number go further north.

D.

SPRING AND AUTUMN VISITANTS—MIGRATORY SPECIES.

Chordeiles popetue.
 Empidonax traillii.*
 Empidonax flaviventris.*
 Empidonax minimus.
 Turdus pallasii.
 Turdus fuscescens.
 Turdus swainsonii.
 Turdus aliciae.
 Regulus calendula.†

Dendroica virens.
 Dendroica canadensis.
 Dendroica blackburniae.
 Dendroica castanea.
 Dendroica pennsylvanica.
 Dendroica striata.
 Dendroica maculosa.
 Dendroica tigrina.
 Dendroica palmarum.

Pipilo erythrophthalmus.*
 Dolichonyx oryzivorus.
 Quiscalus versicolor.*
 Ardetta exilis.*
 Charadrius virginicus.
 Gallinago wilsonii.
 Actodromas maculata.
 Actodromas minutilla.
 Symphemia semipalmata.

<i>Parula americana.</i>	<i>Myiodioctes mitratus.*</i>	<i>Gambetta melanoleuca.</i>
<i>Oporornis agilis.*</i>	<i>Myiodioctes pusillus.*</i>	<i>Gambetta flavipes.</i>
<i>Oporornis formosus.*</i>	<i>Myiodioctes canadensis.</i>	<i>Rhyacophilus solitarius.</i>
<i>Helminthophaga pinus.</i>	<i>Setophaga ruticilla.*</i>	<i>Numenius longirostris.</i>
<i>Helminthophaga chry-</i>	<i>Pyranga rubra.*</i>	<i>Rallus elegans.</i>
<i>soptera.</i>	<i>Vireo solitarius.*</i>	<i>Rallus virginianus.</i>
<i>Helminthophaga rufica-</i>	<i>Passerculus savanna.</i>	<i>Porzana carolina.</i>
<i>pilla.</i>	<i>Melospiza palustris.</i>	<i>Fulica americana.</i>
<i>Helminthophaga pere-</i>	<i>Passerella iliaca.†</i>	<i>Sterna frenata.</i>
<i>grina.</i>	<i>Zonotrichia albicollis.†</i>	<i>Hydrochelidon plumbea.</i>

* A few may, in some cases certainly do, breed here.

† A few probably remain through the winter.

E.

ACCIDENTAL OR VERY RARE VISITORS.

<i>Astur atricapillus.*</i>	<i>Porzana jamaicensis.</i>	<i>Thalassidroma Leachii.</i>
<i>Nyctea nivea.*</i>	<i>Grus canadensis.</i>	<i>Puffinus ———?</i>
<i>Milvulus ———?</i>	<i>Florida cærulea.†</i>	<i>Chroicocephalus atricilla.†</i>
<i>Protonotaria citrea.</i>	<i>Ereunetes pusillus.</i>	<i>Sterna aranea.</i>
<i>Dendroica superciliosa.</i>	<i>Harelda glacialis.</i>	<i>Sterna wilsoni.</i>
<i>Pinicola canadensis.*</i>	<i>Melanetta velvetina.</i>	<i>Rhynchops nigra.†</i>
<i>Ægiothus linarius.*</i>	<i>Pelionetta perspicillata.</i>	<i>Graculus dilophus.</i>
<i>Plectrophanes nivalis.*</i>	<i>Oidemia americana.</i>	<i>Colymbus torquatus.*</i>
<i>Chamaepelia passerina.†</i>		

* From the north in severe winters.

† From the south towards the end of summer.

F.

SOME SPECIES NOT INCLUDED IN THE LIST, WHICH ARE PROBABLY YET TO BE DETECTED IN THE DISTRICT.

<i>Nauclerus furcatus.</i>	<i>Curvirostra americana.</i>	<i>Macrorhamphus griseus.</i>
<i>Nyctale acadica.</i>	<i>Curvirostra leucopterus.</i>	<i>Micropalama himantopus.</i>
<i>Dendroica cærulea.</i>	<i>Plectrophanes lapponicus.</i>	<i>Porzana noveboracensis.</i>
<i>Vireo philadelphicus.</i>	<i>Melospiza lincolni.</i>	<i>Sterna forsteri.</i>
<i>Cistothorus stellaris.</i>	<i>Aegialitis semipalmatus.</i>	<i>Geothlypis philadelphia.</i>

SUMMARY.

Permanent residents.....	44
Winter residents.....	44
Summer residents.....	59
Regular visitants.....	54
Accidental visitants.....	25
Total.....	226

PRIZE QUESTIONS OF SCIENTIFIC SOCIETIES.

In accordance with a request from Utrecht, we give the following translation of the proceedings of several of the Holland societies, relative to prize questions proposed by these establishments for free competition to the citizens of all nations. We regret that we have not received a full set of these proceedings, but hope to present in a future report the remainder of the series.—*Sec. Sm. Inst.*

EXTRACT FROM THE PROCEEDINGS OF THE HOLLAND SOCIETY OF SCIENCE AT HARLEM, FOR THE YEAR 1856.

The society held its 104th annual session on the 17th of May, 1856. Since its last session it has received: 1st. A memoir, written in German, and having the epigraph, "*Nec aspera terrent.*" This memoir was written as a reply to the following question:

"A history is requested of the development of the *Petromyzon fluviatilis*, illustrated by the necessary figures, and compared with that of other fishes, according to the researches of Von Baer, Rathke, and C. Vogt."

This memoir does not, in fact, contain the history of the *Petromyzon fluviatilis*, but that of *P. Planeri*. However, this latter species is so near akin to the other, that the memoir substantially answers the purpose proposed for it by the society, and the gold medal is therefore awarded to the author, Dr. Max Sigmund Schultze, doctor of medicine and philosophy, and professor extraordinary of anatomy in the University of Halle.

The society has received: 2dly. A memoir, written in German, bearing the epigraph, "*Amicus Plato, amicus Socrates, sed magis amica veritas,*" and relative to the following question published by the society:

"The illustrious director of the University of Pulkowa, the Astronomer F. G. W. Struve, published in 1847 his well-known book, entitled "*STUDIES IN STELLAR ASTRONOMY.*" In that work he communicates, as the result of his observations, some very remarkable details concerning the structure of the universe and the transparency of space. The London Astronomical Society, in its report of the twenty-eighth general meeting, gave the support of its authority to Struve's results, while, on the other hand, the celebrated astronomer J. F. Encke, in No. 622 of the *Astronomische Nachrichten*, considers them hypothetical and without foundation. The society, consequently, desires that a profound and scrupulous examination may

decide what the present state of astronomy permits us to consider well established or very probable, as to the structure of the universe."

The society awarded its gold medal and the additional prize of 150 florins to the learned author of this work, Dr. Johann Heinrich Mädler, professor of astronomy and director of the observatory at Dorpat.

The society has seen fit to repeat the following questions, and requires them to be answered before the first of January, 1858:

1. Is there a well-authenticated connexion between the hypertrophies of the spleen and a morbid state of the blood, characterized by an abundance of white globules?

The society desires that this question should be cleared up by anatomico-pathologic researches and by clinical observations.

2. The society calls for a comparative description of the system of the lymphatic and chyliferous vessels in fishes. It requires: 1st, that there be especially an examination of these vessels and of those of the sanguineous system; and, 2dly, that the observations of Föhman and Treviranus be repeated and discussed.

The society requires that at least three very different families be compared, and that the entire system of these two vessels be described as completely as possible, as regards one species of fish; the whole to be accompanied by requisite figures.

3. The society requests that, by a physiological, experimental, and comparative examination, an endeavor be made to establish the nature of the function of the peculiar substance secreted in the great intestine of many of the mammalia. It desires that this examination include, at least, the carnivora, the ungulates, and the rongeurs.

4. Some savans maintain that a portion of an electric current, passing through an electrolyte, traverses it without exercising any chemical action. The society desires that this opinion be subjected to a rigorous experimental examination. If it be verified, the society requests that then there shall be ascertained, for at least six different electrolytes, what the numerical relation is which exists between the part of the current which decomposes the electrolyte and the part for which the electrolyte appears to be endowed with a conducting power similar to that of the metals.

5. The recent experiments of Faraday, made with long wire of metal covered with gutta-percha and immersed in water, have demonstrated that the velocity of electricity in metallic or other conductors is not always the same. The society desires that this velocity, in connexion with the circumstances which modify it, be determined anew by exact experiments.

6. The existence of what is called the catalytic force, by which heretofore we have sought to explain many phenomena becoming more and more doubtful, the society desires a rigorous examination of the phenomena which some savans still attribute to that force.

7. In what part of the human body is sugar produced, and when and in what manner does the production take place?

8. There still remains some uncertainty as to the manner in which the algæ (popularly known as sea-weeds) reproduce their species. The society desires that new researches be made upon this subject, and that the development from the embryo to the perfect plant, of three species at least, belonging to widely differing families of these plants, be observed, described, and, if necessary, illustrated by figures.

9. What are the characteristics, deducible from fossils or other circumstances, which enable us to decide with certainty whether alluvial strata have been deposited in fresh water, in water more or less brackish, or in the sea?

The society desires that the truth of these characteristics should be confirmed by the examination of different beds of alluvial deposit of the origin of which there is no doubt.

10. What conclusion can be drawn, from the geological constitution of the land, as to the extent, &c., of the old embouchure of the Rhine, near Katwijk, such as it existed before it was closed; whether by a violent cataclysm or by progressive encroachments of the land? What are the evident vestiges that this embouchure has left?

11. All that is known about the fossils of the Dutch East Indian archipelago is limited to a few plants of the island of Java, which have been examined and described by Professor Göppert, of Breslau; and to the tertiary molluscs of that island, which have been deposited in the Dutch Royal Museum at Leyden. The island of Java is the only one of that archipelago of which the geological formation is somewhat known.

The society desires that similar researches be extended to another of the populated islands of that archipelago, and that the organic remains, especially those of the oldest strata that are to be found there, be examined and described, so that the geological period of the formation of that island may be determined.

The society would be well pleased to receive the fossils of the strata of that island, not merely for the sake of the augmentation of its collection, but also for the sake of comparing them with the accompanying descriptions and figures. It will award to the author such a sum as will be in proportion to the importance of his memoir and its accompaniments, a sum which, indeed, it would not hesitate to pay for a collection of those fossils, unaccompanied by either description or figures.

The society has this year proposed the following questions, and requests the answers to them before the 1st of January, 1857:

1. According to the researches published in 1848 by the American astronomer, Professor Peirce, the movement observed in the planet Uranus would be perfectly explained by the intervention of the planet Neptune, if we suppose the latter to have a mass of $\frac{1}{20000}$ th that of the sun, while the perturbation observed in the movement of Uranus, which led to the discovery of Neptune, could not be completely attributed to the sole action of the latter, unless it have $\frac{1}{14494}$ th of the mass of the sun, as appears to result from the labors of O. Struve.

It seems that except Professor Peirce no astronomer has attended to this important inquiry, while the correctness of the result obtained by O. Struve is strongly corroborated by his subsequent researches, contributed to the "*Physico-Mathematical Bulletin of the Academy of St. Petersburg*," vol. 9, p. 125.

The society, consequently, desires the calculations of Professor Peirce to be repeated, and also that the existing observations upon Uranus and Neptune should be subjected to a strict examination, with a view to determining whether the existence of Neptune can be the cause of that perturbation in the motion of Uranus which hitherto has not been accounted for.

2. The comet which was discovered on the 24th of July, 1852, by Westphal, at Gottingen, is calculated by Sonntag and Marth to describe its orbit around the sun in a period of about 60 years; a fact which renders that celestial body worthy of a rigorous examination.

The society will award its gold medal to the astronomer who, from existing observations and by the most perfect method, shall deduce the elements of the orbit of this comet.

3. In order to calculate the action of the wind upon the sails of vessels and windmills, and to judge of its meteorological effect, there should be a thorough comprehension of the connexion between the pressure exerted by the wind upon a given area and the velocity of that agent. We therefore call for well-conducted experiments from which there shall result an exact determination of the relation between the velocity of the wind and the pressure which it exerts in the right line of its direction. The society requires that the experiments extend to a velocity of at least 20 metres per second.

4. Experiments which were made in England by order of the British government upon the resisting power of the iron employed in bridges and other railroad works showed that the bars bend more perceptibly under a moving than under a stationary load. The society requests an analytic theory of the increase of that deflection, such theory including a consideration of the weight of the load upon the bars as well as the weight of the bars themselves; and that the deflection thus theoretically ascertained be compared with the results of actual experiment.

5. For some time past, and especially since so many geologists have adopted the upheaval system of Elie de Beaumont, frequent attempts have been made to classify the Plutonic rocks according to their age. Charles d'Orbigny has recently bestowed attention upon this subject, and has published a sketch, or outline, of a classification. Still more recent observations have thrown so much light upon the subject, that it is now possible, as regards a great number of those Plutonic rocks, to determine the relative epoch of their appearance on the surface of the globe. The society therefore requests a geognostic classification of Plutonic rocks, according to the epochs of their appearance as integral portions of the crust of our globe.

6. The society requests a description and a geological chart of Dutch Guiana. It is desired that especial attention be bestowed upon the organic fossils to be found in that country; that the

most interesting objects be described and figured, and that, as far as possible, the most characteristic specimens be sent home to the society. Geologists who devote themselves to this investigation should not neglect the rounded stones which are the detritus of rocks frequently inaccessible. Their composition, and the fossils which they contain, should form a principal object of the researches.

7. The society, being persuaded that researches as to the origin, the nature, and the increase of the deltas of great rivers are calculated to lead to interesting results, requests that a delta at the mouth of some one of the great European rivers be exactly described; that both its horizontal and vertical extent be measured; and that the materials of which it consists, as well as the manner in which these materials are arranged, be described and their origin determined. The society desires that the description shall contain all the details necessary to giving a clear idea of the form, the dimensions, the composition, and the arrangement of the materials of the delta, and an accurate account of its origin.

8. The society desires a monograph with figures of fossil birds.

9. What are the changes which compression makes in crystals, as to their qualities as conductors of heat and electricity and their refracting power? New researches are required upon these points.

10. When the magneto-electric apparatus is in action, heat is developed not only in the soft iron which alternately receives and loses the magnetic state, but also, through the medium of the electric current, in the helix of the conductor, and, perhaps, in other parts of the apparatus. The society requests an examination, both theoretical and experimental, into the relation which exists between the heat developed and the motion of the various parts of the apparatus from which this heat results.

11. It is known that in Carniola and other countries animals are found in grottoes where the light never enters, and where sight is a useless sense. The society requests a rigid examination of at least two species of these blind animals, and a clear exposition, by both anatomical description and figures, of what effect is produced by this blindness, especially upon the cerebral and other parts closely connected with the organ of sight.

12. Is it possible to obtain by a chemical process from certain kinds of peat substances which it is impossible, or exceedingly difficult, to obtain from other vegetable materials? If this is the case, what are the substances, what their chemical qualities, and what is the process?

13. The formation of hail is by no means fully understood; we require the true theory of that phenomenon founded both upon new observations and upon the results of observations already known.

14. When a compound body is traversed by an electric current it frequently occurs that particles from one of the electrodes are transferred to the other. Endeavors have recently been made to utilize this phenomenon, for the purpose of removing from the human body to an exterior electrode certain deleterious matters, such as lead, mercury, &c. The society requests further researches upon this sub-

ject; they must be exact and decisive; and may relate to man, to the inferior animals, or to both.

EXTRACT FROM THE PROCEEDINGS OF THE HOLLAND SOCIETY OF SCIENCE,
AT HARLEM, FOR THE YEAR 1858.

The society held its 106th annual session on the 22d of May, 1858. Since its last session it had received—

1. A memoir, written in Dutch, bearing the epigraph from Cicero de Divin, *Observatio diuturna notandis rebus fecit artem*, *Daily observation creates the art of comprehending and describing things*, and having for its subject the following question:

“It is known that the best Peruvian barks, namely, those which yield the greatest amount of quinine, are so rapidly diminishing as to give reason to fear that they will be altogether exhausted. It is of urgent necessity, therefore, to examine other barks considered febrifuges, containing little or no quinine, but much cinchonine, and to ascertain to what extent the latter base is fitted to replace the former. The society, therefore, requests therapeutic studies to be made of cinchonine and its compounds.”

In 1857 the society determined that this memoir could not be crowned, but should be passed over to the competition of 1858, in order that the secretary might have an opportunity to make the author aware of what was wanting in his work, and thus enable him to perfect it and present it anew.

The society decided that the memoir, thus revised and completed by the author, deserved to be crowned. The author of the memoir thus accepted is P. J. Hollman, M. D., surgeon, &c., of Edam, North Holland.

The society received—

2. A written memoir, having for its epigraph the following sentence from Berzelius' Treatise on Chemistry, vol. v: “The mysterious action which we attribute to a peculiar force, but probably of an electric nature, and what we call catalytic force.”

The society awarded the gold medal to the author of this memoir, Dr. T. L. Phipson, of Paris.

The society received—

3. A memoir, written in French, and sent from Toula, in Russia, and entitled “An attempt to investigate the cause of luminous and calorific phenomena, exhibited by the electric current in a vacuum containing alcoholic vapor.”

4. A memoir, written in French, and sent from Montpellier, “On the former existence of perforating molluscs, especially the tubicolate-conchifera molluscs of Lamarck.”

5. A memoir, received from Paris, written in French, and entitled “A memoir on experiments tending to show the resistance of compressed air moving within pipes.” The society decided that memoirs 3, 4, and 5 include many important observations, but do not

seem to be sufficiently complete to be placed in the number of those which it accepts for publication.

The society thinks fit to repeat the following twelve questions, and it requires answers to them before the 1st of January, 1860:

1. For some years past the Siphonifers have been objects of the learned researches of L. Leuckart, Gegenbaur, Vogt, and Kölliker, and the opinion has prevailed that they should be regarded as colonies of animals. The society requests a critical examination of all that has reference to this class of animals, such examination to be founded upon new researches; and, as an appendix to it, the society requires a plan of classification of the Siphonifers indicative of the relations existing between these animals and other invertebrates.

2. What general results are to be deduced from observations on the development of articulated animals and molluscs in the egg when compared with what is known of the embryology of vertebrated animals?

3. The society requests—1st, an exact description, founded upon microscopic observation, of the compound stomach of ruminating animals, and of the various compartments found in them, illustrated by requisite figures; 2dly, a chemical examination of the fluids contained in the different compartments of these organs at different periods of the process of digestion, and of their action upon aliments by experiments on artificial digestion; and, 3dly, a physiological explication, founded upon these examinations and experiments, of the functions of the various compartments, and of the peculiar structure which enable them to digest, and, perhaps, partially to absorb, a portion of the constituent principles of nourishment.

4. The researches of Slarber, Boddaert, and others, have proved that the shores of Lower Zealand abound in molluscs and rayed animals of species which exist rarely or not at all on shores bounded by sandy beaches. The society desires these shores to be further explored with reference to the fact in question, that the researches be made by the aid of dredges, and that any new or imperfectly known animals thus found may be described and figured.

5. The salts which result from the combination of an electro-positive metallic chloride with an electro-negative chloride are not as yet well known. The society desires new researches upon these interesting compounds.

6. The society requires new researches upon the development of electricity by the friction of liquids upon solids. It especially desires a repetition of the experiments of Faraday with steam at considerable pressures, with a view to ascertaining if there are not some exceptions to the rules laid down by that illustrious *savant*. The society also desires a decision of the question whether the electricity which is frequently developed at the moment when the spheroidal state ceases is due solely to the friction, and whether the greater portion of the electricity obtained when experimenting with solutions should be attributed to the frictions of the liquid molecules against the solid portions deposited by the solution.

7. The electric light which is developed in a vacuum by means, under certain conditions, of Ruhmkorff's apparatus, exhibits alternately, bright and dark bands, which are not yet sufficiently accounted for. The society requires a precise explanation of the causes of this phenomenon.

8. Not only by the direct action of light upon the organs of sight, but also by various action upon the nerves connected with those organs, luminous appearances are produced, even when no light enters the eye itself. The society requires a minute examination of every thing connected with these phenomena, with a view to determining, among other things, whether the appearances can produce secondary images, and if so, what relation do those images bear to the primary phenomenon.

9. The researches of Göppert have shown that all or almost all beds of coal have been formed on the spot or near the spot where they are found. Nevertheless, it is not well known how this has occurred; it still remains to be determined whether they were formed in the sea, in fresh water, or upon dry land, or whether some have been formed under one of these circumstances and some under another. Nor is it more precisely known to what extent we may compare the formation of pit coal with that of peat.

The society requires researches, founded upon a personal examination of different coal beds and peat pits of different kinds, which shall conduce to the *most complete possible* solution of these questions.

10. The society asks exact researches relative to the means by which the mammiferæ and the molluscs are protected from the effects of the great difference of pressure to which they are subject as they descend from the surface of the sea to its successive depths.

11. The most recent researches have proved that the spermatozoides penetrate into the egg. The society requires that observations with reference to this be made upon various mammiferæ, and that the account of these observations be accompanied by the necessary figures.

12. Messrs. Chapuis and Candèze have performed a useful work in publishing, in volume 8 of the Liege Memoirs, a catalogue of the larvæ of the Coleoptera. The society would be glad to receive a memoir containing a similar catalogue of the larvæ of the Neuroptera.

The society has this year proposed the following questions, and requires replies to them before the first of January, 1860:

1. The society requests new researches as to the development and the first phases of life of the *Nematoides*, and especially of those which inhabit the human body.

2. The greater correctness of range obtained by balls and bombs, the centre of gravity of which does not coincide with that of the projectiles, proves the very great importance of a precise understanding of the influence of that eccentricity. The society requests the equation of the trajectory described by the centre of gravity of a sphere

to which a velocity has been communicated in a given direction and which moves in the atmosphere, allowing that its resistance is proportioned to the square of the velocity, and considering the sphere as an inert mass without weight.

3. As chemical affinities undergo remarkable modifications by a change of temperature, and as there is now no difficulty in obtaining heat of great intensity, the society requests a series of researches on affinity at very high temperatures.

4. The conducting power of a metallic wire when traversed for some time by a galvanic current becomes diminished; this effect, if not constant, at least disappears but slowly. The society desires inquiry into the laws which regulate this phenomenon.

5. We require an anatomical description of the bony labyrinth of the organ of hearing, founded on new researches, and applied to the physiology of the ear.

6. We require new experimental researches upon the phenomenon known under the name of fluorescence, making it an especial object to determine what relation exists between this phenomenon and the light produced by substances luminous of themselves, or which become so by friction or by exposure to the sun.

7. The active state of oxygen (ozone) has already engaged the attention of very many scientific men; an analogous state has been supposed to be observed in many other gaseous fluids, but the observations are neither sufficiently numerous nor sufficiently exact. The society desires new researches, with the view to throwing new light upon this phenomenon.

8. The researches of SPENCE BATE have made known the fact that some of the small crustacea construct a nest for themselves. The society invites an exact examination of the nidification in the case of the species already known to practice it, and, if possible, in the case of other crustacea also. The material of which the nests are constructed, as well as the means employed by the crustacea in the construction, should engage the attention of the examiner.

9. Many trees have their stems twisted spirally. We would ask a general physiological explanation of this phenomenon.

10. We want an exact examination of the volcano in the island of Amboyna, (Dutch East Indies,) to determine with precision whether that volcano owes its origin to an upheaving of the ancient strata of the true non-volcanic soil of the island, or whether it is the product of non-coherent matters thrown out by the volcano and accumulated around a crater.

The society recalls the fact that in preceding years it proposed the following questions to be replied to before the first of January, 1859:

1. On passing an electric current through the helix of the electro magnet, the iron does not immediately take the whole magnetic force that the current is capable of giving, and, in like manner, the magnetism of the iron does not suddenly disappear on the breaking of the circuit. The society desires exact experiments for the determi-

nation of the laws of these phenomena; and it also desires a decision of the question whether they are to be attributed to a certain magnetic inertia of the iron, or to the action of currents of induction, or, perchance, to both of these causes at once.

2. We require experimental researches upon the physical and chemical properties of at least two species of vapor, subjected at once to a pressure of at least a hundred atmospheres, and to a very high temperature.

3. Since the establishment of railroads, the construction of oblique arches has very much increased. Nevertheless, the rules for fixing the dimensions of these arches, and of their straight or sloping parts, have not yet reached the degree of perfection arrived at in relation to straight arches. The society, consequently, calls for a mathematical theory of oblique arches whence rules may be deduced for the form and dimensions of these arches for their slopes, and especially for the limit of the inclination allowable to such works.

4. The origin of the sands which extend from the north of Belgium into the Netherlands is not yet well ascertained. The society requests a monograph of those sands; and it especially desires that the rocks of which they are the detritus be indicated with exactitude, if they exist upon the surface of the soil.

5. Some geologists have expressed doubts as to the correctness of the theory of the upheaval of mountains, which they are inclined to attribute to the irregular sinking down of the surface, and the consequent lateral pressure upon the contiguous strata. The society desires an examination of some chain of mountains hitherto regarded as having arisen solely as claimed by the long-received theory and from no other cause, with a view to determine whether its form and elevation must be explained by that cause, or whether they can be sufficiently accounted for by a sinking and its effects in lateral pressure and overlapping.

6. Of what nature is the earth laid bare by the drying up of the lake of Harlem, what is its chemical constitution, and what are we to expect, as regards its fertility, from its chemical constitution and physical properties?

7. The cause of the scratches and furrows to be seen in hard rocks is commonly referred to the existence of vast glaciers in earlier geological periods; the stones carried along by these glaciers having grooved and channelled these rocks. Although as to many places this explanation can scarcely be gainsayed, yet it must be confessed that there are very many other places in which it may be safely affirmed that these effects have had other causes. We want an examination of the characteristics by which such causes may be marked and accurately distinguished from the cause previously mentioned.

8. The North sea has undergone changes from causes common to all seas, as well as from local causes; as, for instance, like that of the change in breadth of *the Strait of Dover*. The society desires a knowledge of these phenomena, with their effects upon the conformation of the coasts, and especially upon the adjoining downs. The society consequently inquires, what changes have been ob-

served in the height of the sea on the coasts of Holland, Belgium, and France? What changes have the currents on those coasts undergone as to their course and their velocity? And what has been the effect of such changes upon the downs in Holland from the mouth of the Meuse to the Helder, and upon those of the islands which lie along the coasts of Friesland and Groningen, especially as to their enlargement in some places and diminution in others.

9. The character of some parts of the organs of hearing are but very imperfectly known. The society calls for exact researches on this subject, so that positive data may be deduced as to the functions of these parts.

10. The society calls for a monograph of the diatomes, both living and fossil, of the island of Java.

11. The application of photography might produce invaluable consequences to the sublime science of astronomy if in a small fraction of a second we could obtain photographic images of celestial as we do of terrestrial bodies. Attempts have been made, but with no satisfactory results, to obtain photographic images of the sun and moon, the failure being especially attributable to the too great length of time required for the production of these images. It seems that no one hitherto has succeeded in photographing the images of planets or of groups of stars. The society, with a view to making photography auxiliary to astronomy, requests an exact and detailed description of a photographic process by which to obtain, in a small fraction of a second, good images of the celestial bodies. The author of the memoir must accompany it with proofs of the process.

12. What, hitherto, have been the results to astronomy of the numerous discoveries of small planets which revolve about the sun between the orbits of Mars and Jupiter? What is their importance, and what their promise as to the future?

13. Although rheostats of different construction have rendered great services to science, these instruments are still far from being equal in precision of results to other scientific instruments. The society, therefore, calls for the description of a rheostat free from the defects of the present construction, with a succinct account of a series of experiments demonstrating the superiority of the new instrument.

14. The maximum of tension at different temperatures has, for some vapors, been determined with great exactness. The Society desires the same to be done for the other vapors, of which that maximum is not as yet well known.

15. Bernouilli's law as to the flow of gas does not agree with recorded experiments. The society requires new experimental researches on this subject.

16. Botany possesses a great many monographs which are justly considered masterpieces; we need only mention those of Richard Brown, Von Martius, Adr. de Jussieu, Grisebach, and others.

The society desiring to promote the progress of botany in that direction, will award its gold medal to the author of a good systematic and organographic monograph of any group of plants as yet but little known.

17. It is of the utmost importance to theoretical chemistry to know the relative intensity of the forces which unite one or two or more equivalents of a substance to one equivalent of another. Admitting that the heat which is disengaged when a combination is effected may serve as the measure of these forces, we yet need experimental research on the quantity of the heat so disengaged when one equivalent of an element combines with one or two or more equivalents of another.

18. What influence has the progress of organic chemistry exercised upon the theory of the composition of inorganic substances? With what degree of certainty can we admit the existence of radical compounds in inorganic combinations?

19. What means of transport to the Indies, whether by the old route of the Cape of Good Hope or by the proposed canal across the Isthmus of Suez, may be considered the most economical for commerce—that by sailing vessels, by steamers, or by sailing vessels aided by steam?

20. The velocity with which magnetism, in whatsoever manner developed in one part of a mass of iron, diffuses itself throughout the mass is not yet ascertained. The society requests that this velocity be determined by rigorous experiments.

21. The difference of numerical results obtained by different savans as to the conducting power of different metals for electricity renders it necessary that on this point there should be a new research. The society, therefore, requests that there shall be a new determination in a rigorous manner of the relative conducting power of the metals and the alloys most in use—the former in a state of chemical purity, and the latter in exact proportions. The society desires that endeavors should at the same time be made to find the law according to which the conducting power of an alloy depends upon that of the metals of which the alloy consists.

22. The society requests a description of the fossil fauna of the Netherland provinces, Gueldre and Overijssel, compared with that of analogous formations in the adjacent countries. Should the author have satisfactory reasons for so doing, he may confine himself either to the vertebrate or to invertebrate animals of these fauna.

The ordinary prize of a satisfactory reply to either of these questions is a gold medal of the value of 150 florins, and a further gratuity of 150 Dutch florins if the reply is deemed worthy of it.

The replies, legibly written, must be made in Dutch, French, English, Italian, or Latin; or in the German language in *Roman characters*; and must be sent, *post free*, accompanied by sealed notes, in the usual manner, to M. J. G. S. Van Breda, perpetual secretary of the Holland society at Harlem.

EXTRACT FROM THE PROCEEDINGS OF THE HOLLAND SOCIETY OF SCIENCE
AT HARLEM FOR THE YEAR 1861.

The society held its 109th annual session on the 18th of May, 1861.

Since its last meeting it had received—

1. A memoir, written in French, on the sponges of the seas of the Antilles.

The directors did not deem fit to come to an immediate conclusion as to the insertion of this work in the society's memoirs.

2. A memoir, written in French, by Mr. T. C. Winkler, of Harlem, containing the description of fossil fishes from the quarries at Sohlhofen, in Bavaria.

3. A memoir presented by Dr. Bierens De Haan, *upon a method of discussing definite integrals*.

On the unanimous recommendation of the members who were consulted, the directors resolved that this memoir should be inserted in the society's transactions.

4. A memoir in reply to the following question: "Many paleontologists, and among them Von Meijer, Heer, Agassiz, and Kaup, have described and figured various animals of which remains have been found in the quarries of Oeningen, situated on the frontiers of Switzerland and of the Grand Duchy of Baden. During their researches, and subsequently, the quarries have constantly furnished new species which the society desires to see described. The society will award its gold medal to the naturalist who will present a good description, accompanied by the necessary figures, of the newly-found species, whether of mammifers, fish, or insects."

This memoir, written in German, contains the description, with a number of figures, of newly-found fossil insects from Oeningen. The society unanimously resolved to crown this memoir, and to request the author to communicate to the society whatever further information he may obtain on the subject of the fossil insects of Oeningen.

On the opening of the sealed note accompanying the memoir it was found that the author was Professor O. Heer, of Zurich.

5. A memoir, written in German, and bearing the epigraph, *Multa pertransibunt et augebitur scientia*, in reply to the following question:

"What have been the results to astronomy of the numerous discoveries of small planets revolving around the sun between the orbits of Mars and Jupiter. What is their importance, and what their promise for the future?"

This memoir is obviously from the pen of a learned and experienced astronomer. The question, however, is only answered in part, and there are serious errors in the calculations. For these reasons the society was unable to crown this memoir.

6. A memoir, written in German, and bearing the epigraph "*Die ewigen Gesetze in der Natur sind für uns die Sprache der Geisterwelt*," in reply to the following question:

“According to most geologists, one of the latest geological periods was characterized by enormous masses of ice covering vast breadths of different countries, and forming enormous glaciers. The society inquires: ‘What was the influence of these glaciers, if they really existed, upon the flora and fauna of these countries, and upon the temperature of the atmosphere?’ ”

The society unanimously awarded the gold medal to the author of this memoir, Professor W. Sartorius de Waltershausen, of Göttingen.

The society thinks fit to repeat the following questions, and to request replies to them *previous to the first of January, 1863*:

1. Throughout Europe the diluvial formation contains bones of the mammals; the society asks a comparative examination of the deposits of those bones in different places leading, if not with certainty, at least with a high degree of probability, to a knowledge of the causes of their interment, and the manner in which it happened.

2. In some districts of the island of Java there are very remarkable polythalamia; the society desires a description, accompanied by figures, of some species of this genus hitherto undescribed.

3. It is very probable that the chain of mountains which borders Dutch Guiana contains auriferous veins, and that the detritus at the foot of that chain contains gold. The society requires a geological description of that chain of mountains, with the result of a mineralogical examination of its detritus.

4. The society requires as complete a list as can be made of the reptiles that exist in the countries near the Dutch possession of St. George del Mina, on the coast of Guinea, with the description of new species.

5. The society requires an anatomical description of the sea-calf, (*Trichechus manatus*, L.,) which is found in the Dutch colonies in America, with an account of the habits of the animal, based on the author's observations.

6. A chemical examination is required of the phosphorescent material of *Lampyrus noctiluca* and of *Lampyrus splendidula*, L.

7. The celebrated astronomer G. B. Airy has expressed (vol. xix, No. 5, of Monthly Notices of the Royal Astronomical Society) some doubts regarding the manner in which it has hitherto been attempted to deduce from the apparent movements of the fixed stars the movement of the sun with the planetary system through space. Airy proposes an entirely new method of attaining the same end, a method which he has applied to only a very few stars. In view of these facts, the society requests new and exact researches upon the movement of the sun with the planetary system; these researches to be founded upon all the fixed stars whose own motion has been settled with sufficient exactness for that end.

8. Bodies in motion, when lighted by the electric spark, appear as though they were perfectly at rest; new researches are requested to be made by means of the application of this principle.

9. The society requests new researches upon the arrangement assumed by particles of iron floating upon or suspended in a liquid

under the influence of a surrounding electrical current, and an application of the phenomenon to what takes place in a bar of iron undergoing magnetization.

10. Exact experimental researches are required in order to ascertain to what extent the dispersion in transversal radii of the particles of a thread of metal by an electric discharge, described and figured by Van Marum in the Memoirs of the Teylerian Society, is analogous to the stratification of the light in rarefied gases, and ought to be attributed to the same cause.

11. Notwithstanding the experiments of Arago, uncertainty still exists as to the state of polarization of diffused light. The society requires new experimental researches, as complete as possible, as to the nature of the polarization both of diffused light and of light radiated from incandescent bodies.

12. What is the nature of the foreign bodies observable in some diamonds? Do they belong to the mineral or vegetable kingdom? Researches upon this question, even though they apply only to a single diamond, will be crowned should they lead to any interesting result.

13. As the development and first habitat of the *Bothriocephalus latus* (*Tænia lata*, L.) are as yet unknown, the society suggests researches which shall elucidate the natural history of this entozoon from the egg to the perfect state.

14. The researches of Kramer have made it known that visual adjustment depends upon a change of form in the lenses of the eye, but the mechanism by which this change is effected is not yet well known. The society requires new researches upon this subject, to be founded on the comparative anatomy of the apparatus which serves to produce the accommodation.

15. The society requests researches into the nature of the substances contained in the watery vapor produced by the respiration of man in a state of health and of the lower animals. It is desirable that these researches should, if possible, be extended to the substances exhaled in some diseases, especially contagious ones; that they should not only be chemically analyzed, but examined as to their noxious effects upon animals.

The society has this year propounded the following questions, and requests replies before the 1st of January, 1863:

1. The fishes of the Indian archipelago have been the objects of the researches of a learned Dutch author. The society desires that the other vertebrates of these islands, and especially those of Borneo, Celebes, the Moluccas, and, above all, those of New Guinea, should be subjected to a similar examination. The gold medal will be awarded to the naturalist who shall send to the society either the description of any new species of mammals, of birds, or of reptiles of these islands, or a memoir containing new and remarkable facts concerning the structure and habits of some of these animals.

2. The society requires a determination, as exact as possible, of the errors of Hansen's Lunar Tables, by the occultations of the

Pleiades observed during the last revolution of the node of the lunar orbit.

3. The celebrated mechanist Ruhmkorff has obtained electric sparks of extraordinary length by the induction apparatus which bear his name. The society desires a determination, by both theoretical and experimental researches, of the laws which govern the length and the intensity of the sparks from instruments of different sizes and construction.

4. What difference is there in the perception of sounds with both ears or with only one? The society desires precise researches upon this difference, and generally upon the influence of duality on the organ of hearing.

5. According to Pasteur, and other savans, fermentation is owing to the development of cryptogamia and infusoria. The society requests new and positive researches on this subject, with the addition, if practicable, of an exact description of these plants and animals, and of their mode of action.

6. What is the best construction, and what the best mode of using steamboats intending to clear rivers of the masses of ice which obstruct their water-course? The society desires that those who reply to this question will carefully consider all that practice has already determined both in this country and elsewhere.

7. The electric perturbations of the atmosphere give rise to electric currents in the telegraph wires. Notwithstanding all that recent researches have made known, these phenomena are not yet completely understood, and the society desires communications of the results of numerous observations, with an account of the most remarkable consequences which may be deduced concerning these currents and their modifications according to the different causes producing them.

8. With the exception of some sites on the eastern frontier of the kingdom of Holland, the geological formations which are covered by alluvial and diluvial deposits in this country are but very little known. The society wishes to receive an account of all that excavations in various places, and other observations, have ascertained with certainty of the nature of these formations.

9. It is known, especially from the work of Professor Roemer, of Breslau, that many of the fossils which are found near Groningen belong to the same species as those which are found in the silurian formations in the island of Gothland. This fact has led M. Roemer to conclude that the diluvium of Groningen has been transported from the island of Gothland; but that origin does not seem to be reconcilable with the direction in which the diluvium is deposited, which direction rather indicates transportation from the southern part of Norway. The society suggests a decision of this question by an exact comparison of the fossils of Groningen with the minerals and the fossils of the silurian and other formations in that part of Norway, regard being had to the modifications these minerals and fossils must necessarily have experienced from distant transportation and its consequences.

10. The combustion of steel, iron, and other metals in oxygen, is

accompanied by the appearance of a multitude of incandescent particles which leap from the surface of the body in combustion, and which, after the experiment, are found in the vessel in which the combustion is operated. The same fact is witnessed in the luminous electric arc of a strong pile between two metallic rheophores, especially if they, or even one of them, is of steel or iron. The society desires to receive an explanation founded upon new and decisive researches as to the cause of this phenomenon.

The society recalls the fact that last year it propounded the following questions, that they might be answered before the first of January, 1862:

1. The society requests new researches upon the development and the first phases of the life of the nematoides, especially of those which live in the human body.

2. As chemical affinities suffer remarkable modifications by change of temperature, and as we can now easily produce very high temperatures, the society requests a series of researches upon affinity at very high temperatures.

3. The conducting power of a metallic wire which has for some time been traversed by a galvanic current becomes diminished; this effect, if it is not constant, at least disappears but slowly. The society wishes for researches into the laws which regulate this phenomenon.

4. A description is wanted of the bony labyrinth of the organ of hearing founded on new researches, and applied to the physiology of the ear.

5. We want new experimental researches relative to the phenomenon known as fluorescence; the author will especially endeavor to ascertain what relation exists between this phenomenon and the light produced by substances which are luminous in themselves, or which become so by friction or exposure to the sun.

6. The active state of oxygen (ozone) has already been the object of the researches of many men of science; an analogous state has been believed to have been observed in many other gaseous fluids, but the observations are neither sufficiently numerous nor sufficiently exact. The society wishes to have further light thrown upon this phenomenon by new researches.

7. The researches of Spence Bate have made known the fact that some crustacea construct nests. The society requires an exact examination of that nidification among the species already known in that connexion, and, if possible, among other species. The material of which the nests are constructed, as well as the means of construction employed by the crustacea, should engage the attention of the author.

8. Many trees have their stem twisted into a spiral; a general physiological explanation is requested of this phenomenon.

9. We desire an exact examination of the volcano of the island of Amboyna, (Dutch East Indian archipelago,) which shall perfectly ascertain whether that volcano owes its origin to an upheaving of the

old strata which form the true non-volcanic formation of the island, or whether it is the production of non coherent matters cast out by the volcano and accumulated around a crater.

10. The society requests the history of the development and life of the morphological elements of the blood of vertebrated animals.

11. The tribes who people the interior of some of the great islands of the Indian archipelago are not yet sufficiently known; they are called by the name of Alfours or Horaforas. The society requests a critical review of all that travellers have reported on the subject, and a descriptive parallel alike between those tribes, in different localities, and between the Alfours and the Papuans. The value of the work would be greatly increased in the estimation of the society if it were accompanied by new observations upon the skull and other parts of the bodies of individuals belonging to these tribes.

12. The society solicits anatomico-physiological researches upon the organs of sight in the *Echinoderms*, with especial reference to the recent discoveries on the subject of these organs in the asteries.

13. The society requests exact microscopic researches upon the phenomena which accompany the disappearance of some organs, as the gills, the tail, and the crest, during the metamorphosis of the batracians. All the phenomena, especially the modification in the vessels which accompany them, should be observed, described, and carefully figured.

14. The society requests a description of the organs which have been termed the rudimentary organs in animals, and a discussion alike of the consequences deducible therefrom with respect to the natural affinities of the animals, and of what those organs allow us to presume as to the mode of the development of animal life upon the earth.

15. M. Person believes that he has found a law which connects the latent heat of the fusion of a substance with its point of fusion and with its calorific capacity in both the liquid and solid states. The society, deeming that this law is not supported by a sufficient number of facts thoroughly proved, desires that it be again subjected to a strict examination.

16. The researches of Dale and Gladstone have particularly fixed the attention of men of science upon the changes that the indices of refraction of liquids undergo by changes of temperature. The society attaches great importance to the knowledge of the relation between the indices of refraction and the temperature, from its conviction that this knowledge may tend to elucidate many other very interesting points in the theory of light. The society therefore demands a series of very exact researches upon these changes in pure liquids and solutions.

17. Physicists are not agreed upon the cause of the motion of the ball in Mr. Gore's electrical experiment. It is urged that that cause should be put beyond doubt by new and decisive experiments.

18. The researches of M. Du Moncel show that the electric light developed under certain circumstances by Ruhmkorff's apparatus con-

sists of two distinct parts—the spark, properly so called, and a luminous aureola. New researches are required upon the causes of this division, and the phenomena which accompany it, and upon the different qualities of the two parts of the same luminous discharge.

19. The experiments of M. Quincke have demonstrated that the forced passage of a liquid across a porous diaphragm develops an electric current. New researches are demanded which may make known the cause of this remarkable phenomenon.

20. The society desires soundings to be taken in various seas for the purpose of procuring specimens of the beds. The specimens thus procured are to be carefully examined with a view to discovering whatever there is that is interesting in these submarine deposits.

21. Exact researches are requested upon the transparency of the atmosphere of Java as compared with that of some European country.

22. In the mountainous country of the left bank of the Rhine, known by the name of Eijffel, there are several conical mountains which evidently owe their existence to volcanic action. The society requests it to be determined, by exact observations made upon the spot, whether there exists traces of upheaval of the older strata, or whether those mountains are not cones of eruption.

The question relating to the fossils of Oeningen, from which the society has been so fortunate as to induce the production of crowned memoirs upon the fishes and the insects, still remains open to competitors as regards the mammifers and the reptiles.

The usual prize for a satisfactory reply to each of the questions is a gold medal of the value of 150 florins, and, when the reply is deemed worthy, an additional premium of 150 Dutch florins in money. Replies very legibly written in Dutch, French, English, Italian, or German, (in the Roman character,) and *post paid*, with sealed notes in the usual way, must be addressed to M. J. G. S. Breda, perpetual secretary of the society, Harlem.

EXTRACT FROM THE PROCEEDINGS OF THE HOLLAND SOCIETY OF SCIENCES,
AT HARLEM, FOR THE YEAR 1862.

The society held its 110th annual session May 17, 1862. Since its last general session no satisfactory response has been received to the questions which it had offered for competition.

Dr. P. Bleeker, a member of the society, has sent a *Memoir intended as a contribution to the natural history of the fish of the coast of Guinea*; and Drs. F. J. S. Schmidt, G. S. Godhart, and J. Van der Hoeven have transmitted a *Memoir on the anatomy of the Cryptobranchus japonicus*. By the unanimous recommendation of the members consulted these two works will form a part of the memoirs of the society.

The society has thought proper to repeat the following questions,

and to request that reponses may be made *before the first of January, 1864*.*

1. The society requests the history of the development and life of the morphological elements of the blood of vertebrate animals.

2. The tribes which people the interior of certain large islands of the Indian archipelago, and which have been designated by the name of Alfours or Horaforas, are not yet adequately known. The society invites a critical review of all that travellers have reported on this subject, and an analytical parallel as well between the tribes belonging to different localities as between the Alfours and Papuans. The value of this work would, in the view of the society, be greatly enhanced if accompanied by new researches on the skull and other parts of the bodies of individuals pertaining to the races in question.

3. The society solicits anatomico-physiological researches on the organs of sight in the *echinoderms*, with especial reference to recent discoveries on the subject of these organs in the *asteria*.

4. Microscopical researches are required on the phenomena which accompany the disappearance of certain organs, such as the gills, the tail, and the crest, during the metamorphosis of *batrachia*. The society desires that all these phenomena, especially all the modifications in the vessels which accompany them, should be observed, described, and figured with care.

5. A description of the organs which have been denominated rudimentary organs in animals, and a discussion, as well of the consequences to be deduced from those organs in regard to the natural affinities of animals, as of the presumptions to which they lead, respecting the mode of the development of animal life on the earth.

6. M. Person believes that he has discovered a law which connects the latent heat of fusion of a substance with its point of fusion and its calorific capacity in a solid and a liquid state. The society, thinking that this law is not supported by a sufficient number of well-verified facts, desires that it should be submitted anew to a rigorous examination.

7. The researches of Dale and of Gladstone have particularly fixed the attention of physicists on the changes which the indices of the refraction of liquids undergo from changes of temperature. The society attaches great value to the knowledge of the relation between the index of refraction and the temperature, convinced as it is that this knowledge would clear up other very interesting points of the theory of light. It desires, consequently, a series of very exact researches on these changes in pure liquids and in solutions.

8. Physicists are not agreed with respect to the cause of the movement of the ball in the electrical experiment of M. Gore. It is to be wished that this cause should be placed beyond doubt by new and decisive experiments.

9. The researches of M. Du Moncel have proved that the electric light developed in certain circumstances by the apparatus of Ruhm-

* It will be seen that the following questions are given on preceding pages, but it has been thought advisable to let them stand as in the original.

korff consists of two distinct parts—the spark, properly so called, and a luminous aureole. New researches are requested as to the causes of this division, and the phenomena which accompany it, and on the different qualities of these two parts of the same luminous discharge.

10. The society desires that in the different seas specimens of the bottom should be procured by sounding; and that after examination everything of interest which these specimens disclose on the nature of the submarine deposits should be communicated.

11. We solicit exact researches in regard to the transparence of the atmosphere of the island of Java, as compared with that of some European country.

12. In the mountainous country of the left bank of the Rhine, known by the name of the Eijffel, there are several conic mountains to be seen, which evidently owe their existence to volcanic action. The society would be pleased to have it decided by exact researches made on the spot whether there exist traces of the upheaval of the older strata, or whether these mountains are only cones of eruption.

The society has this year proposed the following questions, and solicits a response to them *before the 1st of January, 1864*:

1. It desires a complete embryology of the *Squalus spinax* and of the *Squalus acanthias*, from the egg in the ovary to the complete formation of the young fish.

2. It calls for a critical nomenclature, based on the author's own researches, of the annulata and turbellaria, which are found in the interior and on the coasts of the Netherlands.

3. It desires a comparative myology of the anterior members of reptiles and birds, with reference to the denomination of the corresponding or homologous muscles in mammifers, and especially in the human anatomy.

4. The form of the so-called Lichtenberg figures differs according as they have been produced by positive or negative electricity. The society requests a new and satisfactory explanation of this difference.

5. Researches are desired on the molecular change produced in the filaments of different metals by the sustained action of an electric current as strong as it is possible to be without producing fusion.

6. A complete embryology of the *Lepas anatifera* is requested.

7. A comparative anatomical description is desired of the remains of birds found in different geological deposits.

8. In regard to many rocks geologists are left in doubt whether they have been deposited from a solution in water or have become solid after fusion by heat. The society desires that one of these rocks, at the choice of the inquirer, should be submitted to researches which shall lead to a decisive judgment respecting its origin, and at the same time, if possible, cast some light on the origin of other rocks more or less analogous.

9. Since at present carbonic acid may be easily solidified and without danger, it is desired that complete researches be made respecting the physical properties of the solid acid.

10. A microscopic and chemical examination is requested of the

matter secreted by glands situated near the jaws of crocodiles, which yields a strong odor of musk.

11. It is desirable to have an exact anatomical description of the sturgeon, (*Accipenser sturio*,) with a monograph of its development from the egg to the adult animal.

12. The society wishes that the remains of castors and emydes found in bogs at places where these animals do not now live should be compared with living species of these same animals.

13. Are there earthquakes which should be attributed only to the giving way of strata situated at a greater or less depth; and if so, by what signs may they be recognized?

14. It has been observed that oxygen conducts the currents of induction of Ruhmkorff's apparatus only when its tension has been reduced to the pressure of six millimetres of mercury, and that starting from this point its conducting power increases when its tension is diminished until this is but 0.5 millimetres, at which this power seems to attain its maximum. The society desires that this phenomenon should be confirmed by new experiments, and that in comparing it with whatever of an analogous kind is presented by other gases its cause should be made apparent.

The society would call to mind that it last year proposed the following questions, with a view to their being answered *before the 1st of January, 1863*:

1. Throughout Europe the diluvial contains bones of mammifers. The society asks a comparative examination of the deposit of these bones in different places, conducting, if not with certainty, at least with a high degree of probability, to a knowledge of the causes of their interment, and of the manner in which it was effected.

2. In certain formations of the island of Java are to be found highly remarkable polythalamies. The society desires a description, accompanied by figures, of some species of this kind not heretofore described.

3. It is highly probable that the chain of mountains which bounds Dutch Guiana contains auriferous veins, and that the detritus at the foot of that chain contains gold. The society desires a geological description of that chain of mountains with the result of a mineralogical examination of its detritus.

4. The society desires as complete a list as possible of the reptiles which inhabit the countries in the neighborhood of the Dutch possession of St. George del Mina, on the coast of Guinea, with a description of the new species.

5. An anatomical description is desired of the sea-calf (*Trichechus manatus*, L.,) which is found in the Dutch colonies of America, with an account of the habits of the animal from observations made by the author.

6. There is desired a chemical examination of the phosphorescent matter of the *Lampyrus noctiluca* and of the *Lampyrus splendidula*.

7. The celebrated astronomer, G. B. Airy, has lately expressed (Monthly Notices of the Royal Astronomical Society, vol. xix, No. 5,) some doubts regarding the manner in which it has hitherto been at-

tempted to deduce from the apparent movement of the fixed stars the movement of the sun with its planetary system through space. Airy has proposed an entirely new method for attaining the same end, a method which he has applied to only a very few stars. In view of these facts, the society invites new and exact researches on the movement of the sun with the planetary system, based upon all the fixed stars whose proper movement has been determined with sufficient exactness for that purpose.

8. Bodies in motion, illuminated by the electric spark, appear as if they were in a state of perfect repose; new researches are requested to be made by means of the application of this principle.

9. The society calls for new researches on the arrangement assumed by particles of iron floating upon or suspended in a liquid, under the influence of a surrounded electrical current, and an application of this phenomenon to that which occurs in a bar of iron which is undergoing magnetization.

10. It is required to be decided by exact experimental researches up to what point the dispersion in transverse lines of a filament of metal by an electric discharge, as it has been described and figured by Van Marum in the Memoirs of the Teylerian Society, is analogous to the stratification of light in rarefied gases and ought to be attributed to the same cause.

11. Notwithstanding the experiments of Arago, there is still a prevailing uncertainty respecting the state of polarization of diffused light. The society invites new experimental researches, as complete as possible, on the nature and the state of polarization as well of diffused light as of the light radiated by incandescent bodies.

12. What is the nature of the solid bodies observed in some diamonds? Do they pertain to the mineral or to the vegetable kingdom? Researches on the subject, even if relating but to a single diamond, will be distinguished, provided they lead to any interesting result.

13. As the development and original seat of the *Bothriocephalus latus* (*Tænia lata*, L.) are still unknown, the society suggests researches for elucidating the natural history of this entozoon from the egg to the perfect state.

14. We know by the researches of Cramer that the adjustment of the eye depends on a change in the form of the lenses, but the mechanism which produces this change is not yet well understood. The society invites new researches on this subject, based upon the comparative anatomy of the apparatus which serves to produce the adjustment.

15. The society requests researches on the nature of the substances contained in the aqueous vapor produced by the respiration as well of man in a state of health as of animals. It is desirable that these researches should, if possible, extend to the substances exhaled in certain maladies, especially contagious ones, and that not only the chemical analysis of them should be made, but that their injurious effect on animals should be examined.

16. The fishes of the Indian archipelago have furnished an object of research to one of our learned countrymen. The society is desirous

that the other vertebrata of these islands, especially those of Borneo, of Celebes, and of the Moluccas, and, above all, those of New Guinea, should be submitted to a similar examination. It will award its gold medal to the naturalist who shall send it, either the description of any new species of mammifers, of birds, or of reptiles of those islands, or a memoir containing new and remarkable facts on the structure and habits of some of those animals.

17. It is desirable to have as exact a determination as possible of the errors of the tables of the moon, which we owe to M. Hansen, by the occultations of the Pleiades, observed during the last revolution of the node of the lunar orbit.

18. The celebrated mechanist, Ruhmkorff, has obtained sparks of an extraordinary length by the apparatus of induction which bears his name. The society desires to have the laws which govern the length and intensity of these sparks in instruments of different size and construction determined by theoretical and experimental researches.

19. What difference is there between the perception of sounds with one and with two ears? The society invites precise researches on this difference, and in general on the influence of duality in the organ of hearing.

20. According to the researches of Pasteur, and other savans, fermentation is due to the development of cryptogams and of infusoria. The society desires on this subject new and positive researches, and, to such an extent as may be practicable, an exact description of these plants and animals, and of their mode of action.

21. What is the best construction and the best method of employing steamboats intended to clear rivers of the accumulations of ice which obstruct their flow of water? It is desired that in answering this question a particular account should be given of all that has been practically determined on the subject, as well in our own country as elsewhere.

22. Electric perturbations in the atmosphere give rise to electric currents in the wires of telegraphs. Notwithstanding all that modern researches have made known, these phenomena are not yet completely understood; the society desires that the results of multiplied observations should be communicated to it with an exposition of the most remarkable consequences deducible therefrom on the currents in question, and their modifications agreeably to the different causes which give rise to them.

23. With the exception of some deposits on the eastern frontier of the kingdom of the Netherlands, the geological formations covered by the deposits of alluvium and diluvium in that country are as yet but very little known. We would be gratified at receiving a statement of all which has become known with certainty, whether from the excavations executed in different places or from other means of observation, on the nature of those deposits.

24. It is known, chiefly by the labors of Professor Roemer, at Breslau, that many of the fossils found near Groningen belong to the same species with those found in the silurian deposits of the island of Gothland. This fact has led M. Roemer to the conclusion that the diluvium of Groningen has been transported from this island of

Gothland, but such origin appears little reconcileable with the direction in which this diluvium is disposed, a direction which would rather indicate a translation from the southern part of Norway. The society suggests a decision of this question by an exact comparison of the fossils of Groningen with the minerals and fossils of the silurian and other formations of that part of Norway, regard being at the same time had to the modifications to which the translation from a remote country and its consequences have subjected these minerals and fossils.

25. The combustion of steel, iron, and other metals, in oxygen, is accompanied by the appearance of a multitude of incandescent particles, which are thrown off from the surface of the body in combustion, and may be found after the phenomenon in the bottom of the vessel in which the combustion is effected. The same fact is observed in the luminous electric arch of a strong battery between two metallic rheophores, especially if these, or even one of them, is of iron or steel. The society requests an explanation founded on new and decisive researches of the cause of this phenomenon.

The usual prize for a satisfactory answer to each of these questions is a gold medal of the value of 150 florins, and a further donation of 150 Dutch florins, if the answer is thought to merit it. The answers, legibly written in Dutch, French, English, Italian, Latin, or German, (in *Italic* letters,) must be addressed free, with tickets after the manner in use, to M. J. G. S. Van Breda, perpetual secretary of the society, at Harlem.

PROGRAMME OF THE BATAVIAN SOCIETY OF EXPERIMENTAL PHILOSOPHY AT ROTTERDAM.

1. Question 105. It is desirable to obtain accurate statistical data in reference to our drained marsh districts, and this society having determined to continue its efforts, which have already been so successful in reference to South Holland, has resolved to propose the following question:

“What are the statistical characteristics of one of the drained marsh districts of our country.”

The reply to this question should give an account of the situation, the figure, and the extent of this dyke district; the elevation of the surface compared with the plane of the level passing through the zero of the scale of the plane of Amsterdam; the separation of the district into dykes, dams, or other hydraulic divisions, having different summer levels; a succinct description of the windmills or other apparatus in use for pumping up and discharging the superabundant waters; such description also giving the volume of the water raised and the measure of its elevation; the indication of the changes successively made in these machines to increase their discharging power, and the effect obtained, both as to the volume of the water and as to the measure of its elevation; the description of

the canals, or water-courses, showing their lengths, their transverse section, and the obstructions which may influence the discharge of the waters. To these particulars there should be added a historical notice of the various projects for the improvement of draining; such notice to indicate the results of such projects in the cases in which they have been carried into execution. Finally, there should be a description of the means of defence against the exterior waters and the results obtained from the means employed.

2. Question 106. This society, judging that the examination of the temperature of the water of the high seas taken at considerable depths may be of much importance in conducing to a knowledge of the physical state of our globe, and knowing that on board of many vessels, under favorable circumstances, this temperature can be ascertained, solicits careful research upon this point; such research, with proper apparatus and appliances, to be made in latitudes and longitudes in which it has hitherto not been undertaken; and this society further solicits succinct and formal yet fully detailed reports of such researches.

3. Question 111. It is undeniable that the crystalline form is one of the essential properties of matter, but in the present state of our knowledge we possess only an imperfect idea of the relation which truly exists between the crystalline form of a body and its chemical composition.

Crystallographic examination, properly so-called, has hitherto been for the most part limited to objects presented to us by nature in the form of minerals, while we have only a superficial acquaintance with what we may know about crystals artificially obtained from chemical compositions or simple bodies.

The results obtained from the crystallographic examination of minerals cannot develop generally admissible natural laws, because we are very imperfectly acquainted with the conditions under which they are formed and the medium from which they are produced.

As in the artificial formation of crystals we are in every respect better able to ascertain the conditions and the medium, it is proposed that—

“A crystallographic and rigorously conducted examination be made of such inorganic substances as assume the crystalline form sufficiently to allow of cleavage:

“An inquiry be made into the circumstances under which the crystalline form of the selected substances has been modified; and this not only as to the secondary, but also as to the primary or type form.”

“A critical review be made of the crystallographic description of different authors of inorganic substances, with respect to both the primary and the secondary forms.”

“That the progress be stated which has been made towards obtaining a knowledge of the connexion between the crystalline form of a substance and its chemical composition. What obstacle exists to our obtaining this knowledge by the way of experiment?”

4. Question 112. A difference of opinion still existing as to what machine now in use is the best adapted for raising water, we inquire—

a. Is any one of those machines to be preferred under all circumstances and without reference to the description of the motive power?

b. In the negative case, what are the conditions which should entitle any one of those machines to the preference?

c. What, in order to obtain the best results, should be the dimensions of the hydraulic machines adapted to use in our ordinary large draining works?

The reply should be based upon exact observations and experiments, and must in every case be corroborated in the most convincing manner.

5. Question 114. During many years the learned and scientific have discussed the question of the possibility of building enclosed seaports, similar to those of northern and southern Holland, and intended for the safe sheltering of vessels of considerable draught of water. Some of those who have discussed the question maintain that in the present state of practical science there is no difficulty in the formation of such harbors. We therefore ask for a complete plan of a coast harbor, similar, for instance, to that of Scheveningue, which at low water shall admit vessels drawing twenty-one feet, and with an entrance of sufficient breadth to allow such vessels an easy entrance with wind blowing hard from the northwest. To such plan there should be added an estimate of the cost of the construction as well as of the annual repairs.

6. Question 116. The rheumameters of Brunings, Woltman, Pitot, and others, have this disadvantage: that while they indicate the relative value of velocities they do not indicate their absolute value; and the rheumameter of Kraijenhoff is adapted to the examination of only some portions of rivers. We therefore require an instrument calculated for ascertaining the mean velocity in any part of a river, and free from all the known defects of existing inventions, or having such defects remedied as far as possible.

7. Question 117. The history of the changes which have taken place in the course of rivers and in their mouths, as well as of the events which have been the causes or the results of these changes, is of the utmost consequence to obtaining a knowledge of the existing state of our rivers. Many things worthy to be known on this subject are scattered through individual dissertations, and in the debates, reports, resolutions, and memoirs of various learned and scientific societies. It would be useful to collect these things and make them known to the persons interested. Therefore, we suggest: "A judicious historical memoir on the rivers of Holland from the inundation of the Zindhollandsche Waard to the present time."

8. Question 118. Other countries already possess locks of extraordinary dimensions, and the necessity may arise for building similar locks in this country. We therefore solicit: "A critical description of the

manner in which other countries construct locks of extraordinary dimension; and which of those modes of construction deserves preference? Or, are there other modes of construction imaginable and practicable for the construction of similar locks in this country?"

9. Question 120. As the most recent observations of Dr. H. Schacht upon the origin of the lacteal vessels of the *Carica papaya** confirmed his previous experiments, published in the Botanic Journal of Von Mohl and Schlechtendal in 1851, as well as in his treatise on the Anatomy and Physiology of Vegetables, and, as they contradict the well-known observations of an anonymous writer in the same Botanic Journal in 1846, this society desires new observations with a view to putting an end, if possible, to all doubts that still exist as to the origin of the organs in question. The society, therefore, proposes the following question: "How do the lacteal vessels originate in the vegetable kingdom? In the intercellular canals of the cells, or in what other manner? And are those organs, as Dr. Schacht maintains, identical with ramified cortical fibres?"

The society requires the observations to be extended over different natural families of the vegetable kingdom; that they be illustrated by drawings, and, if possible, by microscopic preparations.

10. Question 121. During the last few years many plants have been attacked by various diseases to such an extent that the crops have been deficient, or a total failure, and that the plants themselves have languished and died.

This phenomenon deserves the attention of naturalists and of rural economists, alike with reference to science and to practice.

It is not to be wondered at, therefore, that this subject has occupied the attention of many naturalists. But as hitherto their essays have not produced any satisfactory results, as their views and explanations are constantly contradictory, and finally, as the number of the species and varieties of plants which suffer from disease seems to increase, the necessity for such researches is the more obvious and urgent.

This society, therefore, asks the following question:

"Will scientific men make an anatomico-physiological examination of the diseases of one of the most important of the cultivated plants, accompanied by a critical review of the principal theories concerning the diseases, and also by an indication of the means of preventing or counteracting them?"

The society desires at the same time that, as far as possible, microscopic preparations and drawings be made to illustrate the results of the examination.

11. Question 122. Have some portions of the sun's surface a higher degree of temperature than others; and if so, do the same portions always possess that higher temperature?

12. Question 123. "Light, heat, electricity, and magnetism, those manifestations of force which formerly were attributed to imponder-

* *Annales des Sciences Naturelles*, 4th series, vol. 8, page 164.

able fluids, have in later times been referred to the movements of a perfectly elastic ether, penetrating all things. According to some savans, we must abandon this latter opinion also, and attribute these manifestations of force to movements of matter itself. How is this?"

The solution of this question, or at least evidence conducing to that solution, is required.

13. Question 124. "Can heat directly produce magnetic phenomena?"

This question is to be decided by experiment.

14. Question 125. The society desires to have, as applying to different primary chemical compounds, an experimental determination of the temperature at which each of them becomes decomposed, and how this temperature is modified by the presence of other substances, and under other circumstances.

15. Question 126. The influence which pressure exerts upon fluids through which a galvanic current is passing is still but little known. It has not yet been sufficiently determined whether the decomposition may be entirely stopped by pressure upon the electrolyte; for instance, by completely confining the latter in a strong vessel in which the electrolysis would, in ordinary circumstances, produce gases. It seems that an examination to this effect would be of some importance, both as to voltametric operations and as to the valuation of the work done by the galvanic current. The question, then, is: "What influence has pressure upon decomposition, and how far in this is there a confirmation of the conservation of force?"

This examination should extend to at least three liquids, to be selected at the pleasure of the examiner himself.

16. Question 127. A mathematical theory is required of the aneroid barometer of Vidi, as well as of Bourdon's metallic barometer; such theory not overlooking the influence of temperature.—(See Lamé's Theory of Elasticity.)

17. Question 128. A geological description of the Island of Banda.

18. Question 129. We require a decision of this question: "When steam boilers burst (other causes being left out of view) are we to suspect a development of hydrogen gas, or a transition of the water into the spheroidal state?"

This examination must be confirmed by a collection of exact and authentic reports of cases of bursting of boilers, and, if possible, by experiments expressly made to this end.

19. Question 130. An exposition is requested of the anatomical and microchemical composition, and also of the biography, of one or more species of a family of plants indigenous to the Netherlands, or to some one of their colonies, and previously not satisfactorily examined.

The reply to this question must be accompanied by the necessary figures upon a scale calculated to give a clear idea of the object.

CONDITIONS OF THE COMPETITION.

The gold medal of the society, of the weight of thirty ducats, or its money value, at the option of the author, will be awarded to him whose answer to any one of the above questions shall be adjudged to be the best; while an extra premium of at least fifty, and at most one hundred and fifty florins, will be given to the author of the paper receiving the golden prize, if it be pronounced eminently meritorious.

For the reply next in merit to that which takes the golden prize a silver medal will be given if such reply have peculiar merit.

The replies to the questions must be made in German, Dutch, Latin, French, or English, and must be distinctly and legibly written, inclusive of all alterations and additions, in some other hand than that of the author; they must not be signed with the name of the author, but marked with some sentence or motto which, together with the name and address of the author, shall be repeated in a sealed note accompanying the manuscript, which must be sent, post free, on or before the 1st of February, 1863, to the director and chief secretary, Dr. D. F. Van der Pant.

The notes accompanying the replies which obtain the gold medals will be immediately opened in the general assembly, and those accompanying the replies which do not obtain prizes will be in the same assembly burned unopened; the notes accompanying the replies which obtain the silver medal will not be opened until after the authors make themselves known, and those, the authors of which shall not make themselves known in the interval of time fixed in the programme, will be burned unopened in the first general assembly.

The society reserves the right of inserting in its transactions the crowned replies, either in whole or in part, or altogether to abstain from such insertion; and previous to the publication of the society's transactions the authors of the prize answers will not be at liberty to have them printed or otherwise to make public use of them without permission of the directors.

We may here repeat our former announcement that the society will, with pleasure, receive and examine all treatises and memoirs concerning experimental philosophy and its applications, with a view to publishing them in its transactions, if suitable for that purpose, provided that every such paper bear the signature of the author, or be accompanied by a sealed note containing such signature. And further, the society will award the gold or silver medal to the most important of such papers as shall be delivered on or before the 1st of February, 1863.

QUESTIONS SUBMITTED TO COMPETITION BY THE SOCIETY OF ARTS AND SCIENCES ESTABLISHED AT UTRECHT.

The questions proposed by the society, in reference to subjects purely local, are not comprised in this programme.

1. A series of researches into the warmth generated by plants.
2. What is the state of our knowledge as regards the manner and degree in which the air is vitiated by the respiration and perspiration of men; and what are the means to be adopted for purifying the atmosphere in dwelling-houses and in buildings destined for large assemblies.
3. The society requires investigations into the course of the filaments of the nerves in the spinal cord, commencing at the roots of the nerves in one or more animals. The competitors must not only make use of the microscope, in combination with the mode of investigation adopted by Waller, but also of physiological experiments.
4. A dissertation on the life and merits of Christiaan Huyghens is requested.
5. Required an essay upon the affinity of the Greek and Sanscrit languages, containing a critical and systematic exposition of the results of the linguistic investigations on this subject, and stating clearly how far a comparative study of these two languages has promoted or may yet promote the profound knowledge of the first of them.
6. A dissertation on Justinian and his age.
7. An historical and critical investigation of the various modes in which the system of Hegel has been developed since his death, in 1831, and what has been its influence upon other branches of knowledge, in particular on the doctrine regarding God and the world. The relation of that development and influence to other theories and systems of later times should also be indicated.
8. An historico-critical review of the Malayan literature. Not only an examination of the published, but as much as possible also of unpublished Malayan works is required.
9. A history of the settlement of the Dutch in Guinea, or on the west coast of Africa, from the beginning of that settlement to our own day.
10. *Historia critica tribunatus Plebis, quæ interiorem civitatis Romanæ conditionem per varia deinceps tempora spectandam præbeat.*
11. *Exploretur et diiudicetur Asinii Pollionis de C. Julii Cæsaris commentariis sententia, quæ exstat in Suetonii Cæsare c. 56: "eos Pollio Asinius parum diligenter parumque integra veritate compositos putat: quum Cæsar pleraque, et quæ per alios erant gesta, temere crediderit; et quæ per se, vel consulto, vel etiam memoria lapsus, perperam ediderit."*
12. *Disquisitio de loco difficiliore vel controverso ad disciplinam antiquitatis sive græcæ seu latinæ pertinente.*
13. *Eruantur ex Inscriptionibus Latinis, quæ in variis Romani imperii regionibus sunt repertæ, et e Grammaticorum veterum indiciis eæ voces et formæ, in quibus proprii regionis cuiusque sermonis vestigia agnoscantur, eæque accurate collectæ ita disponantur, ut quæ et*

qualia fuerint Latini sermonis idiomata in variis imperii Romani partibus usurpata, quantum fieri possit, efficere inde liceat.

14. Disquisitio de T. Livii dictione, qua proprietates eius in verborum usu et constructione, exemplis diligenter collectis ordineque dispositis et illustratis, exponatur, et quatenus in ea *ιδιωτισμὸς*, quem *Patavin- itatis* nomine ei obiecit Asinius Pollio, vestigia exstare videantur, ostendatur.

A gold medal of the value of 30 ducats (13 pounds sterling,) or an equivalent in silver, will be accorded to the successful competitor. This prize will be doubled for questions Nos. 2 and 13. The answers must be sent in (post free) previous to the 30th of November 1861—those to the 13th only, before the 30th of November, 1863, addressed to Dr. J. W. Gunning, the secretary of the society, at Utrecht. The author is at liberty to write in the English, Dutch, German (in Italic characters,) French, or Latin language; but in answering to questions 10, 11, 12, 13, and 14, the Latin language is required. The answers must not be in the author's own handwriting; they are to be accompanied by a sealed envelope, enclosing his name, and if a member of the society, having the letter "L" on the address. The successful answers will be published in the society's works.

Further information may be obtained on application to the secretary of the society.

EXTRACT FROM THE PROCEEDINGS OF THE ROYAL ACADEMY OF THE NETHERLANDS.

The senate of the Royal Academy for the Promotion of Letters, Philosophy, and History, received, pursuant to the bequest and testament of Hœufftian, during the past year eight poems from five poets. The first is entitled "On the Divine Excellency of Learning;" the second, "Ode addressed to Bartholomew Burghesium on the Death of John Marchetti;" the third, "On the Decay of the Gallic Language;" the fourth, fifth, and sixth, bear the title in common, "On Italian Affairs during the years 1848 and 1849; Three Unpublished Odes;" the separate titles of which are: *a.* "The Assault of Peschiera and the Victoria Goidensis, addressed to King Charles Albert;" *b.* "Griefs of Mourning Italy;" *c.* "Fortunes and Death of King Charles Albert in Exile;" the seventh is, "The Tauric Peace, a Mythological Poem, addressed to Poets;" and the eighth, "The Hero Garibaldi."

Upon these poems the academy, in its session on the 8th day of April, pronounced the following judgment:

The first is weak and dubious in its argument, wanting in poetical coloring and spirit, and expressed in language very far from being either pure or perspicuous. The second is unacceptable, for two reasons: first, it consists of fewer than the fifty verses which are expressly demanded; and secondly, because it has already appeared in print. The third, besides having all the faults of the first, some-

times violates the fundamental laws of metre. The three odes, which answer to the fourth, fifth, and sixth poems, so progressively descend in the scale of elegant Latinity, perspicuity, and true poetic fervor, that the second ode is more faulty than the first, and the third than either. The seventh poem is throughout couched in language less fitted to poetry than to prose, and even that not terse or good Latin, and, in brief, has scarcely one redeeming merit. Finally, the eighth poem is in the form, by no means commendable, of an acrostic; and moreover, the author is so thoroughly unskilled in the elements of metre, so completely a novice in the Latin language, that he cannot even be fairly called a versifier.

The academy, therefore, has decided that the prize can be awarded to none of these poems, and that all the sealed notes containing the names of the authors be burnt.

The academy again invites competition on the part of foreigners as well as residents for the Hœufftian prize for the best Latin poem.

The prize to be contended for is a gold medal of the value of 120 florins, and will be awarded to the author of that Latin poem, if not fewer than fifty verses, not translated from any other language, and never published, which the judges appointed by the academy shall pronounce to be worthy of the honor.

Poems intended for this competition must be sent in prior to the first of January, 1862, to H. J. Koenen, unsigned by the authors, but accompanied by sealed notes containing their names.

The result of the competition will be pronounced in public session of the academy, to be held before the month of April, 1862.

The poem to which the judges award the prize will be printed at the charge of the Hœufftian bequest. The sealed notes of the unsuccessful competitors will be burned, and the poems returned to the authors who claim them.

I. DEWAL,
President of the Academical Senate.

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JOHN TAYLOR,

President of the Senate

A. F. ROCKWELL,

Speaker of the House of Representatives

T. W. CLARK,

Secretary of the Senate

WILLIAM CLAYTON,

Chief Clerk of the House of Representatives

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CONSTITUTION OF THE STATE OF DESERET.

MEMORIALS

OF THE

LEGISLATURE AND CONSTITUTIONAL CONVENTION OF
UTAH TERRITORY,

PRAYING

The admission of said Territory into the Union as the State of Deseret.

JUNE 9, 1862.—Referred to the Committee on the Territories, and ordered to be printed.

*To the honorable the Senate and House of Representatives of the United
States of America in Congress assembled:*

GENTLEMEN: We, your memorialists, the members of the general assembly of the State of Deseret, respectfully state that our peculiarly isolated position, the well-proven inadequacy of a territorial organization to meet the wants of a rapidly increasing population, now numbering from eighty to a hundred thousand, a disposition to lessen governmental expenditures when they are, of necessity, so great, and an earnest desire to enjoy those inherent, inalienable, and constitutional rights guaranteed to every American citizen, have induced the citizens of Utah to unanimously and constitutionally organize a State government, preparatory to their admission into the Union as the "State of Deseret;" wherefore your memorialists most respectfully solicit your honorable body to favorably consider this our petition, and, at as early a day during your present session as other important duties will permit, take action admitting the State of Deseret "into the Union on an equal footing with the original States in all respects whatever."

Adopted by the general assembly of the State of Deseret, on the 17th day of April, A. D. 1862.

JOHN TAYLOR,

President of the Senate.

A. P. ROCKWOOD,

Speaker of the House of Representatives.

T. W. ELLERBECK,

Secretary of the Senate.

WILLIAM CLAYTON,

Chief Clerk of the House of Representatives.

MEMORIAL.

To the honorable the Senate and House of Representatives of the United States in Congress assembled:

Your memorialists, the citizens of the United States in the Territory of Utah, by their delegates in convention now assembled, respectfully present this their memorial, humbly praying for admission into the federal Union as a "free and sovereign State," under the name and style of the State of Deseret, with the constitution herewith presented.

They do thus the more boldly urge their admission into the family of States, knowing that their claims are based upon their constitutional rights, upon constitutional law, and upon their native and inherent franchise as American citizens.

The people of the United States, for themselves and their posterity, established a Constitution to secure alike to one and all the blessings flowing therefrom. Wherever American citizens are to be found on American soil, or that portion of it over which the jurisdiction of the Constitution is extended—however few their number—there and to them is the right given, and to all their future generations bequeathed, to say who shall govern them, and to have a voice in the enactment of the laws by which they shall be governed. If this franchise—great, glorious, and sacred as it is—be worth anything, it is a franchise that the dividing lines of States or Territories cannot annul.

Your memorialists maintain that self-government is an inherent right of every American citizen; nay, that it is the birthright of every man, bequeathed to him by the Almighty Dispenser of all good gifts. The citizens of Utah enjoy not this right. The executive and judicial departments of the Territory are made up of strangers alike to her customs, her history, her wants, and her interests.

It has been contended in favor of territorial governments that the pioneers to new territory, in consideration of their numerous privations and the wants and expenses incident to the formation of new settlements, require and are entitled to the fostering care and charitable aid of the parent government. But shall it be held as sound doctrine by American statesmen and jurists that such care and aid are to be held as an equivalent for the liberty of the citizen? or that the holy birthright as freemen born for self-government should be exchanged for a mess of pottage? That such care and aid, however, are not required by the citizens of Utah, your memorialists would respectfully call your attention. No trouble or expense is considered burdensome when all is done by the "consent of the governed."

The isolated condition of Utah, far removed from the national capital, and the growing importance of her position as the joining link between the Atlantic and Pacific States, should give her, apart from other considerations, a strong claim to be at once introduced and numbered among the family of States.

The number of the population could not be claimed as a barrier to the admission of Deseret. Her population is ample; but were it not half its present number, still that cannot be an impediment. "The

Constitution," said the present honorable Secretary of State, "does not prescribe 93,700, or any other number of people, as necessary to constitute a State." "The Constitution," he says, in the same speech, (April 9, 1856,) "prescribes only two qualifications for new States, namely: a substantial civil community and a republican government." Both of these are claimed by your memorialists for Deseret.

Why should Deseret be denied the privileges granted to other States which have been admitted? Call to mind, gentlemen, what Utah has done towards the national welfare. Has she lain in sloth and idleness since 1847? or have political wranglings taken the place of industry and the pursuit of the peaceful arts? Let her fruitful fields; her public and her private buildings; her settlements scattered over five hundred miles from north to south, thriving with numerous populations and musical with the hum of industry; the telegraph and the overland mail; let these testify, in contrast to the bleak, barren deserts found by her pioneers, then the resorts of wild beasts and wilder Indians.

The constitution herewith presented being genuinely republican; Congress having no power from the Constitution to deny a proper application for admission into the Union, but the full power to admit, and indeed the duty imposed upon them to guarantee unto all the States a republican form of government; the universal call from the citizens being in favor of a State government; the right of representation with taxation being undeniable, and knowing by experience their ability to sustain themselves in a State organization, your memorialists humbly ask, and respectfully claim as their unquestionable right, to be admitted into the federal Union or family of States, under the title of the State of Deseret; feeling assured that when they ask for bread from the granaries of freedom you will not give them a stone quarried from the crumbling ruins of colonial despotism.

The bearers of this memorial and of the constitution and proceedings of the convention, with the documents pertaining to the State organization and proceedings of the general assembly, are the senators and the representative who will be elected in accordance with the constitution adopted by the convention; and they are hereby authorized to make the necessary application to each house of Congress for the admission of this State into the Union, and we bespeak for them the candid hearing and consideration by your honorable body of the aforementioned and such other matters as they may present before you pertaining to the interest and well-being of this rising State; trusting that you will accord unto them the seats in the national councils of our common country to which the partiality of a loyal people has unanimously elected them.

DANIEL U. WELLS,
President of Convention.

Adopted in convention in Great Salt Lake City, Territory of Utah,
January 23, A. D. 1862.

WILLIAM CLAYTON,
Secretary of Convention.

CONSTITUTION OF THE STATE OF DESERET.

We, the people, grateful to the Supreme Being for the enjoyment of life and mercy, and feeling our dependence on him for a continuation of those blessings, do ordain and establish the following constitution:

ARTICLE I.

Boundary and name.

All that part of the territory of the United States bounded as follows: Beginning on the 37th parallel of north latitude where it intersects the 32d meridian of longitude west from Washington, or the 109th meridian of longitude west from Greenwich; thence west on said parallel to the 39th meridian of longitude west from Washington, or the 116th meridian of longitude west from Greenwich; thence north on said meridian to its intersection with the 42d parallel of north latitude; thence east on said parallel to the 32d meridian of longitude west from Washington, or the 109th meridian of longitude west from Greenwich; thence south on said meridian to the place of beginning, is hereby formed into a free and sovereign State, and named Deseret.

ARTICLE II.

Declaration of rights.

SECTION 1. In republican governments all men should possess their natural rights, among which are those of enjoying and defending their life, and liberty, acquiring, possessing, and protecting property, and of seeking and obtaining their safety and happiness.

SEC. 2. All political power is inherent in the people, and all free governments are founded in their authority, and instituted for their benefit; therefore they have an inalienable and indefeasible right to institute government, and to alter, reform, or change the same, when their safety, happiness, and the public good require it.

SEC. 3. All men have a natural and inalienable right to worship God according to the dictates of their own consciences; and the general assembly shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof, or to disturb any person in his religious worship or sentiments, and all persons demeaning themselves peaceably, as good members of this State, shall be equally under the protection of the laws; and no subordination or preference of any one sect or denomination to another shall ever be established by law; nor shall any religious test be ever required for any office of trust under this constitution.

SEC. 4. Every person may speak, write, and publish his sentiments on all subjects, being responsible for the abuse of that right; and no law shall be passed to abridge the liberty of speech or of the press.

SEC. 5. The people shall be secure in their persons, houses, papers, and possessions from unreasonable searches and seizures.

SEC. 6. The right of trial by jury shall remain inviolate ; and all prisoners shall be heard by self or counsel, at their own election ; and no person shall be held to answer a capital or otherwise infamous crime unless on presentment or indictment of a grand jury ; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb, nor be compelled in any criminal case to be a witness against himself.

SEC. 7. All penalties and punishments shall be in proportion to the offence ; and all offences, before conviction, shall be bailable, except capital offences where the proof is evident or the presumption great. Excessive bail shall not be required.

SEC. 8. The writ of habeas corpus shall not be suspended, unless in case of rebellion or invasion, or the public safety shall require it, and then only as provided by legislative enactment.

SEC. 9. Treason against this State shall consist in levying war against it, or adhering to its enemies or giving them aid and comfort.

SEC. 10. The general assembly shall pass no bill of attainder, ex post facto law, nor law impairing the obligation of contracts.

SEC. 11. The law shall not be suspended but by legislative authority.

SEC. 12. The right of petition by the people shall be preserved inviolate.

SEC. 13. The right of citizens to keep and bear arms for common defence shall not be questioned.

SEC. 14. Private property shall not be taken for public use without just compensation.

SEC. 15. No standing army shall be kept up in this State in time of peace, and the military shall at all times and in all places be in strict subordination to civil power.

SEC. 16. The enumeration of certain rights shall not be construed to impair or deny others retained by the people.

ARTICLE III.

The powers of government of the State of Deseret shall be divided into three distinct departments, viz: legislative, executive, and judicial.

ARTICLE IV.

Of the legislative.

SECTION 1. The legislative authority shall be vested in a general assembly, consisting of a senate and house of representatives, the members of which shall be elected by the people.

SEC. 2. The sessions of the general assembly shall be annual, until otherwise provided by legislative enactment; and the first session shall be as hereinafter provided.

SEC. 3. The members of the house of representatives shall be chosen biennially by the qualified electors of their respective districts, and

their term of office shall continue two years from the day of their election.

SEC. 4. Senators shall be chosen in the same manner as the representatives, and their term of office shall continue four years from the day of their election.

SEC. 5. No person shall be a member of the general assembly except he be a free, white male citizen of the United States, and an inhabitant of this State one year preceding the time of his election, and has, at his election, a residence in the district he may be chosen to represent.

SEC. 6. The general assembly shall have power to prescribe the number, and make an apportionment, of senators and representatives: *Provided*, The number of senators shall not be less than one-third, nor more than one-half of the representatives; and at its first session each house of the general assembly shall, respectively, be divided by lot, as equally as may be, into two classes; the seats of the representatives of the first class shall be vacated at the expiration of one year, and of the senators of the first class at the expiration of two years.

SEC. 7. Each house shall choose its own officers, and judge of the qualification, election, and return of its own members.

SEC. 8. A majority in each house shall constitute a quorum to do business, but a smaller number may adjourn from day to day, and compel the attendance of absent members in such manner and under such penalty as each house may provide.

SEC. 9. Each house shall have all powers necessary for a branch of the general assembly of a sovereign State.

SEC. 10. Each member of the general assembly shall be privileged from civil arrest during any session, and in going to and returning from the same.

SEC. 11. Neither house shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which they may be sitting.

SEC. 12. The members of the general assembly shall take an oath or affirmation to support the Constitution of the United States and of this State, which may be administered by each other, or by any person qualified to administer oaths.

SEC. 13. The veto power of the governor shall be allowed by the general assembly except on bills which, when reconsidered, shall be again passed by a majority of two-thirds; and any bill vetoed by the governor shall be returned within ten days, (Sundays excepted,) with his objections, otherwise it shall become a law, unless the general assembly by adjournment prevent its return.

SEC. 14. Every law passed by the general assembly shall take effect from and after its publication, unless otherwise provided at the time of its enactment.

SEC. 15. At the first election under this constitution, the voters of this State shall elect thirteen senators and twenty-six representatives, in the manner members are now elected to the legislative assembly of the Territory of Utah, and according to the apportionment made

by the legislative assembly during its eleventh annual session in 1861-'62. All subsequent elections shall be held and conducted as prescribed by law.

SEC. 16. The legislative power of the general assembly of this State shall extend to all rightful subjects of legislation consistent with the Constitution of the United States and of this State.

SEC. 17. It shall be the duty of the general assembly to elect two senators to Congress, as prescribed in section 3, article 1, of the Constitution of the United States.

SEC. 18. The house of representatives shall have the sole power of impeachment, and the senate shall have the sole power to try impeachments. When the governor or lieutenant governor is tried under impeachment, the chief justice shall preside. No person shall be convicted under impeachment without the concurrence of two-thirds of the members present.

ARTICLE V.

Of the executive.

SECTION 1. The executive power shall be vested in a governor, whose term of office shall be four years, and until his successor is elected and qualified. A lieutenant governor shall be elected at the same time and for the same term.

SEC. 2. No person shall be eligible to the office of governor or lieutenant governor unless he has been a citizen of the United States six years, and a resident of this State four years next preceding his election.

SEC. 3. When the governor elect has received his certificate of election, he shall qualify for entering upon the duties of his office by taking an oath or affirmation to support the Constitution of the United States and of this State, and to faithfully discharge the duties of his office; said oath or affirmation may be administered by any person authorized to administer oaths.

SEC. 4. The governor shall be commander-in-chief of the naval and military forces of this State.

SEC. 5. He shall transact all executive business with the officers of government, civil and military, and may require information in writing from the officers of the executive department upon any subject relating to the duties of their respective offices.

SEC. 6. He shall use all due diligence for the faithful execution of the laws.

SEC. 7. When any office shall from any cause become vacant, and no mode is prescribed by the constitution or laws for filling such vacancy, the governor shall have power to fill such vacancy by appointment, which shall expire when such vacancy shall be filled by due course of law.

SEC. 8. He shall also have power to convene the general assembly by proclamation, when, in his opinion, the interests of the State require it.

SEC. 9. He shall communicate by message to the general assembly

at every session the condition of the State, and recommend such measures as he in his wisdom shall deem expedient.

SEC. 10. In case of disagreement in the general assembly with regard to the time of adjournment, the governor shall have power to adjourn the session by proclamation.

SEC. 11. No person shall, while holding any lucrative office under the United States, or this State, execute the office of governor.

SEC. 12. The governor shall have power to grant reprieves and pardons, and commute punishments, except in cases of impeachment.

SEC. 13. There shall be a seal of this State, which shall be kept by the governor, and be used by him officially, and be called "Great Seal of the State of Deseret."

SEC. 14. All grants and commissions shall be "in the name of the State of Deseret," shall be sealed with the great seal of State, be signed by the governor, and countersigned by the secretary of state.

SEC. 15. A secretary of state, treasurer, auditor of public accounts, and attorney general shall be elected by the general assembly, and shall continue in office for the term of four years, and shall perform such duties as may be assigned them by law.

SEC. 16. In case of impeachment of the governor, his removal from office, death, resignation, or absence from the State, the powers and duties of the office shall devolve upon the lieutenant governor until such disability shall cease or the vacancy be filled.

ARTICLE VI.

Of the judicial.

SECTION 1. The judicial power shall be vested in a supreme court, circuit courts, probate courts, and such other courts as the general assembly may, from time to time, establish, which shall have such jurisdiction and exercise such powers as may be prescribed by law.

SEC. 2. The supreme court shall consist of a chief justice and two associate justices, two of whom shall be a quorum to hold courts.

SEC. 3. The supreme judges shall be elected by the general assembly for the term of six years after the first election under this constitution. At said first election one shall be elected for two years, one for four years, and one for six years.

SEC. 4. The judges of the supreme court shall be conservators of the peace throughout the State, and shall exercise such other jurisdiction and appellate powers as shall be prescribed by law.

SEC. 5. The style of all process shall be "State of Deseret," and all criminal prosecutions shall be "in the name of the State of Deseret."

ARTICLE VII.

Of elections.

SECTION 1. All free, white, male citizens of the United States over twenty-one years of age, having a residence of six months in this State, shall be entitled to vote.

SEC. 2. Electors shall in all cases, except treason, felony, or breach of the peace, be privileged from arrest on the days of election, during their attendance at such election, and while going to and returning therefrom.

SEC. 3. No elector shall be obliged to perform military duty on the day of election, except in time of war or public danger.

SEC. 4. No person in the military, naval, or marine service of the United States, by being stationed in any garrison, barrack, military or naval place or station within this State, shall be entitled to vote, unless otherwise provided for by law.

SEC. 5. The first general election under this constitution shall be held on the first Monday in March next, (1862,) for the presentation of this constitution, to be accepted or rejected by the electors, and for the election of a governor, lieutenant governor, representative to the Congress of the United States, and members of the general assembly, as provided for in this constitution. Said election shall be conducted in accordance with the existing laws of the Territory of Utah, and the returns made to the secretary or either of the assistant secretaries of the convention framing and adopting this constitution, who shall, so soon as the returns are received, and in the presence of the president or any three members of said convention, open and examine them, and determine whether a majority of votes are "for" or "against" this constitution; and if "for," furnish to each person having the highest number of votes for any State office or representative to Congress a certificate of his election.

SEC. 6. The first meeting of the general assembly shall be as directed by proclamation by the governor elect, and subsequent sessions shall be held as provided by law.

ARTICLE VIII.

Of the militia.

SEC. 1. The militia of this State shall be composed of all able-bodied male citizens between the ages of 18 and 45 years, except such as are or may hereafter be exempt by the laws of the United States or of this State, and shall be armed, equipped, and trained as the general assembly may provide by law.

SEC. 2. All commissioned officers of the militia shall be elected as the general assembly shall prescribe, and shall be commissioned by the governor of the State.

ARTICLE IX.

Miscellaneous provisions.

SEC. 1. In order that no inconvenience may arise in passing from a territorial to a State government, it is hereby declared that the present organization, laws, and everything pertaining to the territorial government of Utah shall remain in full force and virtue in law, until superseded by the action of the State government under the provisions of this constitution.

SEC. 2. All officers of this State shall continue in office until superseded by their successors.

SEC. 3. The officers created by virtue of this constitution shall take an oath or affirmation to support the Constitution of the United States and of this State, and to faithfully perform the duties of their office.

SEC. 4. The general assembly shall encourage education.

ARTICLE X.

Providing for amendments to this constitution.

If at any time the general assembly deem it necessary, and for the best interest of the State, that this constitution be revised, altered, or amended, they shall cause such proposed revisions, alterations, or amendments to be published in the same manner as provided for notices of elections, and submitted to the votes of the electors of the State at their next general election; and if two-thirds of the votes cast are in favor of such proposed revisions, alterations, or amendments, the same shall thereafter become parts of this constitution; otherwise, this constitution shall remain unaltered.

Done in convention, in Great Salt Lake City, by the unanimous vote of the delegates present, the twenty-second day of January, A. D. 1862. In witness whereof, we have hereunto subscribed our names this twenty-third day of the month and year above written.

DANIEL U. WELLS,
President of the Convention.

Delegates from Great Salt Lake county.—Abraham O. Smoot, Elias Smith, James Ferguson, Reuben Miller, Wilford Woodruff, Archibald Gardner, Albert Carrington, John Taylor.

Delegates from Davis county.—Lot Smith, Thomas Grove, William R. Smith, Christopher Layton, Samuel W. Richards.

Delegates from Weber county.—Aaron F. Farr, Lorin Farr, Chauncy W. West, Jonathan Browning, James McGaw, Crandell Dunn.

Delegates from Box-Elder county.—Lorenzo Snow, Jonathan C. Wright, Alfred Cordon.

Delegates from Cache county.—Ezra T. Benson, Peter Manghan, William B. Preston, William Hyde, Preston Thomas, William Manghan, Seth M. Blair.

Delegates from Summit county.—Thomas Rhoads, Henry W. Brizzee, John Reese.

Delegates from Tooele county.—Evan M. Greene, John Rowberry, Eli B. Kelsey.

Delegate from Shambiss county.—Lysander Gee.

Delegates from Cedar county.—Zerubabel Snow, William Price.

Delegates from Utah county.—Leonard E. Harrington, James W. Cummings, Albert K. Thurber, Lorenzo H. Hatch, Benjamin F. Johnson, Aaron Johnson, W. M. Wall.

Delegates from Juab county.—Timothy B. Foot, Israel Hoyt, Jonathan Midgley.

Delegates from San Pete county.—Orson Hyde, Frederick W. Cox, Matthew Caldwell, William S. Seely, Bernard Snow, Madison D. Hambleton.

Delegates from Millard county.—Thomas Callister, Thomas R. King, Levi Savage, jr.

Delegates from Beaver county.—William J. Cox, Edward N. Thompson, James H. Rollins.

Delegates from Iron county.—Hosea Stout, Silas S. Smith, Horace S. Eldredge.

Delegates from Washington county.—John M. Moody, William Crosby, George A. Smith.

Attest :

WILLIAM CLAYTON,
Secretary.

ARMING OF FORT ADAMS.

[To accompany Joint H. Res. No. 79.]

P A P E R S

ACCOMPANYING

J O I N T R E S O L U T I O N

IN RELATION TO

The arming of Fort Adams.

JUNE 9, 1862.—Ordered to be printed.

THE DEFENCES OF NARRAGANSET BAY.

Letter from Mayor Cranston.

NEWPORT, January 6, 1862.

To the Editor of the Journal:

Agreeably to your request, I herewith furnish you a map of our coast from Point Judith to Seconnet Point, which will show the most important points where redoubts, &c., should be erected, and also the points where the east and west passages should be protected by floating steam batteries, &c.

Fort Adams, which is about one mile, by water, southwest from this city, is one of the largest and best-constructed forts in the United States, and can mount four hundred and sixty-four guns of different calibre. At present there are mounted, as follows: five 32 barbette, eighteen 32 casemate, sixteen 24 barbette, eleven 24 casemate, nine 24 howitzers for flank defence, one 8-inch mortar, two 12 field howitzers, two 6 field guns; total number mounted, 64. Not mounted: seventy-seven 32-pounders, fifteen 24-pounders, forty-eight 24-pound howitzers for flank defence. Whole number of guns at the fort, 204. There are forty-eight carriages, barbette and casemate, that have no guns mounted on them; there are ninety-two guns without carriages. The carriages are old; most of them might be used in an emergency, but would stand but little service. If the fort was fully supplied with guns it would require about five thousand men, making due allowances for killed and wounded, to work the guns, &c., in a full

engagement. It would probably be a rare instance where all the guns would be worked at the same time; as a general thing, not unless a formidable fleet should consolidate its fire upon the fort. The naval fleet of an enemy, in consequence of the great improvements in projectiles, &c., during the past few years, could easily, by shells, &c., destroy this city, and, perhaps, silence the guns of Fort Adams, or, at all events, enter the harbor of Newport by the main passage, and thus lay not only Newport, but Providence, Warren, Bristol, and Fall River, under contribution. I mean that this could probably be done, unless Fort Adams was sustained by other works along the coast, as I shall directly describe. It was always contemplated by engineer officers that Fort Adams would be sustained by permanent or temporary works in various directions along the coast, as occasion might require.

In case of war with a foreign power the harbor of Newport would probably be the first that the enemy would attempt to enter and hold, from the fact that it is the most easy of access at all seasons of the year, and in all weather on the Atlantic coast; it is commodious and safe, and would make a most desirable naval depot for them; then, again, its central position between New York and Boston, if occupied by the enemy, would enable them to control almost the whole of New England, and materially affect New York, and other portions of the north. It will thus be seen that it is of the most vital importance for the welfare of our country that the coast around Newport should be *immediately* and strongly fortified; comparatively speaking, this can be speedily done, and at not a very heavy expense. The additional guns at Fort Adams should be promptly furnished—a portion of which should be rifled, as all those now there are the smooth bore. Fort Walcott, on Goat island, should be placed in a State of defence; Fort Dumplings, on Conanicut island, southwest from Goat island, and also Rose island, northwest from Goat island, should each have a battery. The Dumplings occupies a commanding position, and could easily be put in a state of defence, as there is a redoubt already there. If these points were properly fortified, the enemy would be subjected to a terrific and probably destructive cross-fire, as will be seen by reference to the map. The distance from Fort Adams to the Dumplings is about seven-eighths of a mile; between these points the water is from four to twenty-nine fathoms, the water being deepest about midway.

Strong works, with a powerful battery, should be erected on Dutch island, which is located in the west passage, about midway from the island of Conanicut to the main land on the west, called Narraganset; this is a very important point for a powerful battery, as it could rake the whole passage. Below Dutch island redoubts should be constructed on the island of Conanicut, and on Narraganset, on the main land opposite. Several old stone-loaded ships should be anchored between the two redoubts, or in that vicinity, prepared to be quickly sunk in an emergency. There should also be two or three iron-clad steam floating batteries to be used in this passage; they might be made of the roughest materials, provided they were strong;

if furnished with engines that would move them four or five knots an hour they would answer an excellent purpose, as they would only require sufficient steam power to keep them in moderate motion in the bay as occasion might require in an engagement: these could be speedily and cheaply furnished.

In the east passage similar redoubts to those which I have already described for the west passage should be erected on the Middletown and Little Compton sides of the river; old stone-loaded ships should here be anchored, to be sunk, as aforesaid, in an emergency; and two or three similar steam floating batteries should be placed as indicated on the map, which would be very effective in preventing the enemy from landing in surf boats along the line of the river on either side. Temporary earthworks should be erected from Brenton's Reef to Sachuest Point; a small number of these could easily prevent the enemy from landing in surf boats or otherwise on the shores and beaches between the last-named points.

It is of the utmost importance to defend the west passage; for however strongly the main entrance to the harbor might be protected by Fort Adams and temporary works to be erected at other points bordering on the inner harbor as I have described, large ships-of-war could pass up said passage unless fortified, as the water in the channel is nine fathoms deep, and this within a quarter of a mile of the island of Conanicut; if they passed up there is ample and safe anchorage for a formidable fleet in the vicinity of the island of Prudence. Large-sized gunboats could proceed far up Providence river into Warren river, Bristol harbor, and up Mount Hope bay to Fall River.

The principal points where defences are required, and would be most effective, are marked on the map, so that the reader can easily understand my descriptions by examining that. The semi-circular marks on the map on Conanicut island, Narraganset, Dutch island, Dumplings, Rose island, Middletown, Little Compton, and from Brenton's Reef to Sachuest Point, indicate the places at or near which redoubts, &c., should be constructed. The cross-lines between Fort Adams, the Dumplings, Goat island, and Rose island indicate the terrible cross-fire which a ship or fleet would be subjected to in attempting to enter this harbor by the main passage, if the above-named points were fortified as I have suggested. The dotted lines in the east and west passages show about where the old stone-loaded ships should be anchored, and the † above said dotted lines show about where the steam floating batteries would probably be most effective in an engagement. Ships attempting to pass up the west passage, if it was thus fortified, would encounter a severe cross-fire from Dutch island, the steam floating batteries, and the redoubts on Conanicut island and Narraganset.

There are about four hundred persons connected with the Naval Academy, under its scientific and accomplished superintendent, Capt. George S. Blake, who is assisted by some of the ablest officers in the service; a large proportion of those belonging to the academy have had more or less experience in gunnery. In an emergency this

whole force could be placed in Fort Adams in thirty minutes ; an equal number, consisting of the Newport Artillery, Newport Artillery Old Guard, companies A, B, C, D, E, F, and the Sprague Zouaves, of the National Guard, could be placed there in about the same time ; other volunteers could be easily supplied from the city for its defence until assistance could be had from other portions of the State.

There has been a guard, day and night, at Fort Adams for the last year, placed there by me early in January last, by instructions from the War Department, and continued until the fort was temporarily transferred by the War Department to the Navy Department, in May last, for the accommodation of the Naval Academy ; since that time it has been in charge of Capt. Blake, Superintendent of the Naval Academy ; during several weeks past no one has been allowed to visit the fort unless by a permit from the proper naval or civil authorities. Signals between the fort, the frigate Constitution, and the city, are arranged ; by these, in a very short time, the whole force of the academy and a good force from this city can be placed in the fort, as I have before stated.

In the erection of works for the defence of the coast, I am confident that it would afford great pleasure to Cap. Blake and his officers to render any assistance in their power that might be required. It is a matter of so much importance that I trust the United States government will order the necessary work to be performed immediately. An engineer officer could easily estimate the expense of the proposed work, and the probable time that would be required for its execution. I am sustained in my views of this matter, as herein expressed, by distinguished scientific officers of the army and navy.

I have been as full and clear in my description of the coast and the defences which it requires as time will permit ; if my official duties were not so numerous and pressing, especially at this time, I would have been more minute, but I think that my illustrations are sufficiently explicit for all practical purposes.

WILLIAM H. CRANSTON, *Mayor.*

General Totten's report.

The following passage is extracted from an elaborate report on our national defences made by Chief Engineer J. G. Totten, in 1851, to Mr. Conrad, then Secretary of War :

“ As a harbor, Narraganset bay is acknowledged by all to be the best on the whole coast of the United States, and it is the only close man-of-war harbor that is accessible with a northwest wind, the prevailing and most violent wind of the inclement season. Numerous boards and commissions, sometimes composed of naval officers, sometimes of army officers, sometimes of officers of both services, have, at different times, had the subject of this roadstead under consideration, and all have concurred in recommending, in strong terms, that it be made a place of naval rendezvous and repair, if not a great

naval depot; one or more of these commissions preferring it for the latter purpose to all other positions. These recommendations have not been acted on, but it is next to certain that a war would force their adoption upon the government. With the opening of this anchorage properly defended, hardly a vessel-of-war of ours could come, either singly or in small squadrons, upon the coast in the boisterous season without arriving at this port on account of the comparative certainty of an immediate entrance. And this would be particularly the case with vessels injured by heavy weather or in conflict with an enemy; with vessels bringing in prizes or pursued by a superior force.

“This use of the port would almost necessarily bring with it the demand for the means of repairing and refitting; and the concentration of these upon some suitable spot would be the beginning of a permanent dock yard.

“For the same reason that ships-of-war would collect here, it would be a favorite point of rendezvous for privateers and their prizes, and a common place of refuge for merchantmen.

“From this, as a naval station, the navigation of Long Island sound, and the communication between this and Martha's Vineyard sound or Buzzard's bay might be well protected; New London harbor would be covered; this navy yard would command southwardly, as that from Hampton roads northwardly, the great inward curve of the coast between Cape Cod and Cape Hatteras, the influence of which command over the blockading operations of an enemy will be apparent, when it is considered that the only harbors of refuge left to him will be the Delaware, Gardner's, and Buzzard's bays and Martha's Vineyard sound.

“The bays just mentioned belong to the class which, being too wide for complete defence by batteries, must call in such auxiliary defence as the navy may supply; and, in reference to their defence by these means, nothing can be more important than the fortifications at Narraganset roads, because all but Delaware bay, including an anchorage for ships-of-war under Block island, would be commanded by a single squadron of those floating defences lying in these roads. To a squadron of steam batteries, for instance, lying under the fortification it would be a matter of little consequence into which of the above anchorages an enemy should go, all being within reach of three or four hours, and some within sight. We will here observe, by the way, that this use of floating defences is in accordance with the principle before insisted on; they are not expected to close the entrance into these several bays, that would require a squadron for each at least equal to the enemy's; but as the enemy goes in merely for rest or shelter, and there is no object that he can injure, he may be permitted to enter, and our squadrons will assail him only when the circumstances of wind, weather, &c., give all the advantages to the attack. The fortification of Narraganset roads is, therefore, in effect, a most important contribution toward the defence of all the neighboring anchorages. But the same properties that make Narraganset roads so precious to us would recommend them to the enemy also;

and their natural advantages will be enhanced in his eyes by the value of all the objects these advantages may have accumulated therein.

“If this roadstead were without defence, an enemy could occupy it without opposition, and by the aid of naval superiority form a lodgement on the island of Rhode Island for the war. Occupying this island with his troops, and with his fleets the channels on either side, he might defy all the forces of the eastern States; and while from this position his troops would keep in alarm and motion the population of the east, feigned expeditions against New York or against more southern cities would equally alarm the country in that direction; and thus, though he might do no more than menace, it is difficult to estimate the embarrassment and expense into which he would drive the government.

“It has been alleged that similar consequences would flow from the occupation of other positions, (such for instance as are afforded in the bays just mentioned,) and that therefore the defence, in a strong manner, of Narraganset roads is useless. Even allowing that there are other inaccessible positions whereon an enemy might place himself, is it a reason, because the foe can in spite of us possess himself of comparative unsafe and open harbors, that we should not apply to our own uses, but yield up to him, the very best harbor on the coast?—that we should submit to capture and destruction the valuable objects that accumulate in consequence of the properties of the harbor?

“But it is believed that none of the outer and wider harbors will answer for such an establishment as we have supposed, nor for any other purpose than an occasional anchorage for ships-of-war; and for these reasons, among others, that although ships-of-war might possibly ride in these broad waters at all seasons, it would seem to be a measure of great temerity for transports to attempt it, except in the mildest seasons; and there can be but little doubt that a hostile expedition would resort to no harbor, as a place of rendezvous, unless it afforded sure protection to its transports, these being the only means by which ulterior purposes could be executed, or final retreat from the country effected.

“If, moreover, Narraganset roads became a naval station, or at least the station of a floating force designed to act against these outer waters, such an establishment by an enemy on other positions would at once be put upon the defensive and require the constant presence of a superior fleet, thus measurably losing the object of the establishment. Independent of deficient qualities as harbors, however, none of these bays would answer our purposes: First, because they cannot be securely defended; and second, because they are difficult of access from the main—the communication with them being liable to interruption by bad weather, and liable to be cut off by the enemy.

It seems quite evident that the circumstances involved in the occupation and defence of Narraganset roads will not be materially changed by the facilities of railroad communications; so far as numbers can aid in defensive arrangements, they could be supplied in due time and to the extent needed by the surrounding district and common modes of conveyance.”

ENGINEER DEPARTMENT,
Washington, April 19, 1862.

SIR: I have the honor to return herewith the communication of the Rhode Island delegation in Congress, dated 6th February, on the subject of Fort Adams and the defences of Narraganset bay, referred to this office on the 18th instant for report, and to state as follows:

The communication recommends that the sum of one hundred thousand dollars be appropriated for Fort Adams, and states that the armament is very deficient, as well as the fort needing repairs. Since the letter was written fifty thousand dollars have been appropriated for the fort. It is therefore considered most expedient that the remaining fifty thousand dollars of the recommendation of the delegation, or such other sum as Congress may deem proper, be appropriated for the purpose of providing the required armament for the fort; and it is recommended that guns of large calibre, with their carriages, equipments, and ammunition, be supplied.

I have the honor to be, very respectfully, your obedient servant,

JOS. G. TOTTEN,

Brevet Brigadier General and Colonel of Engineers.

Hon. EDWIN M. STANTON,

Secretary of War.

WAR DEPARTMENT,
Washington City, D. C., April 28, 1862.

GENTLEMEN: The Secretary of War directs me to acknowledge the receipt of your communication with regard to the condition of Fort Adams and the defences of Narraganset bay, and to say that it was referred to the chief of engineers, who has returned it, with the accompanying report, from which you will perceive that, since the date of your letter, fifty thousand dollars have been appropriated for the fort; and it is considered most expedient that fifty thousand dollars more, or such other sum as Congress may deem proper, be appropriated for the purpose of providing the required armament for the fort.

I have the honor to be your obedient servant,

P. H. WATSON,

Assistant Secretary of War.

Hons. JAMES F. SIMMONS, H. B. ANTHONY, W. P. SHEFFIELD, and
G. H. BROWNE, *Washington, D. C.*

JOINT RESOLUTION FOR THE ARMING OF FORT ADAMS.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the sum of fifty thousand dollars be, and the same is hereby, appropriated, in addition to the sums already appropriated, for the purpose of providing a suitable armament for Fort Adams, in Rhode Island.

EMPLOYMENT OF LABORERS OF AFRICAN EXTRACTION
IN THE ISLAND OF ST. CROIX.

CORRESPONDENCE

BETWEEN

THE STATE DEPARTMENT OF THE UNITED STATES AND
THE CHARGE D'AFFAIRES OF DENMARK,

IN RELATION TO

*The advantages offered by the Island of St. Croix for the employment
of laborers of African extraction.*

JUNE 10, 1862.—Ordered to be printed.

DEPARTMENT OF STATE,

Washington, June 6, 1862.

SIR: I have the honor to submit for your consideration, and that of the committee of which you are chairman, a copy of correspondence between this department and Colonel Raasloff, chargé d'affaires of Denmark in this city, upon the subject of the advantages offered by the island of St. Croix for the employment of laborers of African extraction.

I have the honor to be, sir, your obedient servant,

WILLIAM H. SEWARD.

Hon. J. HICKMAN,

*Chairman of the Committee on the Judiciary,
House of Representatives.*

DANISH LEGATION,

Washington, April 23, 1862.

SIR: The Danish island of St. Croix, in the West Indies, which is a sugar-growing country, has, for several years past, been checked in its progress towards increased prosperity and the full development of its agricultural resources by the want of manual labor—the present

rural population being insufficient for those purposes; and it has thus become an object of prominent importance for that island to call forth and encourage the immigration of a laboring population from other countries. Among the plans and propositions for such immigration, which have consequently been devised by the authorities of St. Croix, is one, according to which it is contemplated to offer to negroes, who, in consequence of the recent political events in this country, may have become emancipated, or who may, at all events, have acquired the right and faculty to dispose of themselves, an opportunity of emigrating from this country to St. Croix. This plan has met with the approbation of his Majesty's government, and the undersigned has been instructed to favor its realization, and, if the government of the United States should be willing, to negotiate and enter into a special convention, whereby the contemplated emigration would be placed under the auspices and the guarantee of the two governments. The governor of the Danish West India Possessions has also appointed a special agent, who has arrived in this country, for the purpose of making all necessary arrangements for the transport of such persons, of the description above alluded to, as may be found desirous of emigrating from this country to the island of St. Croix. The terms which that agent is authorized to offer to such emigrants are: free transport to St. Croix for all those who engage to labor on a sugar plantation for a term of three years—the emigrants to be, during that term as well as after its expiration, treated in every respect, and, namely, to receive the same compensation for their labor, as the native free rural population.

I enclose a memorandum describing the condition of that population, such as it has been regulated and determined by laws, the wisdom and humanity of which are universally recognized, and shall only add the remark, that any encouragement in the shape of outfit, or premium, or other pecuniary assistance, which the government of the United States may determine to offer to emigrants going to St. Croix, will accrue to their immediate and direct advantage, and go to improve their future condition over and above what the laws of St. Croix, as above mentioned, secure to the immigrant as well as to the native rural population.

Referring to what I have had the honor of stating above, I therefore beg respectfully to inform you that I shall be prepared, if and when the government of the United States shall inform me of its willingness, to negotiate and to enter into a special convention for the emigration of free negroes belonging to the categories above alluded to, as well as their colonization in St. Croix, and also that the above-mentioned special agent from St. Croix will be prepared, whether it be under such a convention or without it, to visit the localities in which persons may be found, with a view of setting fairly before them the terms which he is authorized to offer to emigrants to St. Croix, and to arrange and to carry out such emigration, provided the government of the United States will permit him to do so, and that he may expect in his operations to be allowed such facilities as the case may admit of, and as the government of the United States

may be at liberty to grant. Feeling satisfied, as I do, that the moral and material existence, which the emigrant would be sure to find in St. Croix, is all that his best friends can desire for him, I beg to express the hope that, whatever may be the present or immediate result of the communication I have hereby the honor of submitting, the government of the United States will eventually give to this project of emigration as favorable a consideration and as much of countenance and encouragement as to other similar plans and propositions which may be presented hereafter from other sides.

I avail myself of this occasion to renew to you, sir, the assurance of my very high consideration.

W. RAASLOFF.

Hon. WM. H. SEWARD,

Secretary of State of the United States, Washington, D. C.

Memorandum describing the condition of the free rural (negro) population in the Danish island of St. Croix, West Indies.

The Danish government emancipated the slaves in St. Croix in the year 1848, paying to their owners a reasonable compensation. Fearing, however, that the sudden transition from slavery to entire and unrestricted freedom might prove injurious to the morality of the people, especially if they were allowed to fall into habits of idleness and vice, whereby also the prosperity of the whole community would be seriously endangered, the government issued, shortly after, on the 26th of July, 1849, a "Provisional act to regulate the relations between the proprietors of landed estates and the rural population of free laborers," of which a copy is hereto annexed. The general features of this act, which still remains in force, but a modification of which is now contemplated in the sense of gradually abolishing the fixed price for labor and of allowing a free competition among the laborers, are the following: the price of labor is fixed by law; and when a laborer engages to work on an estate, it must be for a term of one year, in order that he may not, by declining to work when the crop is ready, cause the ruin of the estate; but he is at liberty, at the expiration of that term, to engage work elsewhere, or to leave the agricultural districts and to remove to one of the towns, provided he can show any honest means of livelihood, in which case there is no restriction on the price of labor, and he becomes in every respect as free as any white man. Many negroes have already availed themselves of this latter alternative, and have become owners of real estate. The laborer is also at liberty, at the expiration of his contract, to leave the island entirely. No punishment is allowed on the estate; and any complaint from either the proprietor or the laborer is referred to and decided by the magistrate, who is appointed by the crown. The whole aim and tendency of the above-mentioned stipulations in the "Provisional act" has been, on the part of the Danish government, to secure the welfare of the people, to prevent able-

bodied laborers from becoming vagrants, and gradually to prepare the emancipated slaves for a rational enjoyment of entire and unrestricted freedom. The price of labor in money is, for an adult or first-class laborer, 15 cents for each of the first five days of the week, and 20 cents for Saturday. This remuneration in money may appear small in this country, but it is the usual price paid in the West Indies, and is, besides, enhanced by several valuable advantages. Generally, all the members of a family, small children only excepted, will have occasion to earn wages as first, second, or third-class laborers; and they are, moreover, furnished with the necessary food for a week (six quarts of corn meal and two pounds of salt fish) at a fixed price of 25 cents, while it costs the proprietor from 35 to 40 cents. Each family is furnished with a good house, rent free, and a piece of ground for raising their own vegetables; they are generally well provided with fruit and sugar, as well as bread, and other supplies are frequently given to them by the estate. The hours of labor are nine to nine and a half hours per day, and very moderate labor at that. Ten cents per month are deducted from the wages of the laborers, for which they are provided with medical attendance, which is excellent, and also with medicines.

The children are by law obliged to attend school five days in the week till their tenth year is completed, and afterwards on Saturdays only until they have filled their thirteenth year. The schools are well conducted, and kept at the expense of the government. Nobody is obliged to go to church; but custom, public opinion, and the religious training of the rural population—which, together with the schooling of the children, for many years past, and when slavery prevailed, was an object of special solicitude with the Danish government—cause the churches to be largely attended; and to see those well-dressed people, many of them in carts drawn by ponies belonging to themselves, go to church on a Sunday, impresses the beholder with the conviction that they are a contented and happy people, and that the Danish laws have proved themselves to be both wise and humane. It is, in fact, owing to the wisdom of those laws that the emancipation of the slaves in St. Croix has proved more successful there than that in any other country in securing the happiness and progress in civilization of the negro without ruining the owners of the land.

The climate of St. Croix is universally known as extremely agreeable and salubrious. The English language is generally, or it may be said almost exclusively, used all over the island.

W. RAASLOFF.

Provisional act to regulate the relations between the proprietors of landed estates and the rural population of free laborers.

I, PETER HANSEN, knight commander of the order of Dannebrog, the King's commissioner for, and officiating governor general of, the Danish West India islands,

MAKE KNOWN: That whereas the ordinance dated 29th July, 1848, by which yearly contracts for labor on landed estates were introduced, has not been duly acted upon; whereas the interest of the proprietors of estates as well as of the laborers requires that their mutual obligations should be defined; and whereas, on inquiry into the practice of the island, and into the private contracts and agreements hitherto made, it appears expedient to establish uniform rules throughout the island for the guidance of all parties concerned, it is enacted and ordained:

PARA. 1. All engagements of laborers now domiciled on landed estates, and receiving wages in money or in kind for cultivating and working such estates, are to be continued as directed by the ordinance of 29th July, 1848, until the 1st day of October of the present year; and all similar engagements shall in future be made, or shall be considered as having been made, for a term of twelve months, viz: from the 1st of October till the 1st of October, year after year.

Engagements made by heads of families are to include their children between five and fifteen years of age, and other relatives depending on them and staying with them.

PARA. 2. No laborer engaged as aforesaid in the cultivation of the soil shall be discharged or dismissed from, nor shall be permitted to dissolve, his or her engagement before the expiration of the same on the 1st of October of the present or of any following year, except in the instances hereafter enumerated:

A. By mutual agreement of master and laborer before a magistrate.

B. By order of a magistrate, on just and equitable cause being shown by the parties interested.

Legal marriage, and the natural tie between mothers and their children, shall be deemed by the magistrate just and legal cause of removal from one estate to another. The husband shall have the right to be removed to his wife, the wife to her husband, and children under fifteen years of age to their mother, provided no objection to employing such individuals shall be made by the owner of the estate to which the removal is to take place.

PARA. 3. No engagement of a laborer shall be lawful in future unless made in the presence of witnesses and entered in the day-book of the estate.

PARA 4. Notice to quit service shall be given by the employer as well as by the laborer, at no other period but once a year, in the month of August, not before the first nor after the last day of the said month. An entry thereof shall be made in the day-book, and an acknowledgment in writing shall be given to the laborer.

The laborer shall have given or received legal notice of removal

from the estate where he serves before any one can engage his services. Otherwise the new contract to be void, and the party engaging or tampering with a laborer employed by others will be dealt with according to law.

In case any owner or manager of an estate should dismiss a laborer during the year without sufficient cause, or should refuse to receive him at the time stipulated, or refuse to grant him a passport when due notice of removal has been given, the owner or manager is to pay full damages to the laborer, and to be sentenced to a fine not exceeding \$20.

PARA. 5. Laborers employed or rated as first, second, or third class laborers shall perform all the work in the field, or about the works, or otherwise concerning the estate, which it hitherto has been customary for such laborers to perform according to the season. They shall attend faithfully to their work and willingly obey the directions given by the employer or the person appointed by him. No laborer shall presume to dictate what work he or she is to do, or refuse the work he may be ordered to perform, unless expressly engaged for some particular work only. If a laborer thinks himself aggrieved, he shall not therefore leave the work, but in due time apply for redress to the owner of the estate or to the magistrate.

It is the duty of all laborers on all occasions and at all times to protect the property of his employer, to prevent mischief to the estate, to apprehend evil-doers, and not to give countenance to, or conceal, unlawful practices.

PARA. 6. The working days to be as usual, only five days in the week, and the same days as hitherto. The ordinary work of estates is to commence at sunrise and to be finished at sunset every day, leaving one hour for breakfast, and two hours at noon from 12 to 2 o'clock.

Planters who prefer to begin the work at 7 o'clock in the morning, making no separate breakfast time, are at liberty to adopt this plan, either during the year or when out of crop.

The laborers shall be present in due time at the place where they are to work. The list to be called and answered regularly; whoever does not answer the list when called, is too late.

PARA. 7. No throwing of grass or of wood shall be exacted during extra hours, all former agreements to the contrary notwithstanding; but during crop the laborers are expected to bring home a bundle of longtops from the field where they are at work.

Cartmen and crook-people when breaking off shall attend properly to their stock as hitherto usual.

PARA. 8. During crop the mill-gang, the crook-gang, boilermen, firemen, still-men, and any other person employed about the mill and the boiling-house shall continue their work during breakfast and noon hours as hitherto usual; and the boilermen, firemen, magass carriers, &c., also during evening hours after sunset, when required, but all workmen employed as aforesaid shall be paid an extra remuneration for the work done by them in extra hours.

The boiling-house is to be cleared, the mill to be washed down,

and the magass to be swept up, before the laborers leave the work, as hitherto usual.

The mill is not to turn after six o'clock in the evening, and the boiling not to be continued after ten o'clock, except by special permission of the governor general, who then will determine, if any, and what extra remuneration shall be paid to the laborers.

PARA. 9. The laborers are to receive until otherwise ordered the following remuneration:

A. The use of a house or dwelling rooms for themselves and their children, to be built and repaired by the estate, but to be kept in proper order by the laborers.

B. The use of a piece of provision ground, thirty feet in square as usual, for every first and second class laborer; or, if it be standing ground, up to fifty feet in square. Third-class laborers are not entitled to, but may be allowed some provision ground.

C. Weekly wages at the rate of fifteen cents to every first-class laborer, of ten cents to every second-class laborer, and of five cents to every third-class laborer for every working day.

Where the usual allowance of meal and herrings has been agreed on in part of wages, full weekly allowance shall be taken for five cents a day or twenty-five cents a week.

Nurses loosing two hours every working day shall be paid at the rate of four full working days in the week.

The wages of minors to be paid as usual to their parents, or to the person in charge of them.

Laborers not calling at pay-time personally, or by another authorized, to wait till next pay-day, unless they were prevented by working for the estate.

No attachment of wages for private debts to be allowed, nor more than two-thirds to be deducted for debts to the estate, unless otherwise ordered by the magistrate.

Extra provisions occasionally given during the ordinary working hours are not to be claimed as a right, nor to be bargained for.

PARA. 10. Work in extra hours during crop is to be paid as follows:

To the mill-gang and to the crook-gang for working through the breakfast hour one stiver, and for working through noon two stivers per day.

Extra provision is not to be given except at the option of the laborers in place of the money or in part of it.

The boilermen, firemen, and magass carriers are to receive for all days when the boiling is carried on until late hours, a maximum pay of twenty (20) cents per day. No bargaining for extra pay by the hour is permitted.

Laborers working such extra hours only by turns are not to have additional payment.

PARA. 11. Tradesmen on estates are considered as engaged to perform the same work as hitherto usual—assisting in the field, carting, potting sugar, &c. They shall be rated as first, second, and third-class laborers, according to their proficiency. Where no definite terms have been agreed on previously, the wages of first-class trades-

men, having full work in their trade, are to be twenty (20) cents per day. Any existing contract with tradesmen is to continue until October next.

No tradesman is allowed to keep apprentices without the consent of the owner of the estate. Such apprentices to be bound for no less period than three years, and not to be removed without the permission of the magistrate.

PARA. 12. No laborer is obliged to work for others on Saturdays, but if they choose to work for hire, it is proper that they should give their own estate the preference. For a full day's work on Saturday there shall not be asked for nor given more than twenty (20) cents to a first-class laborer; thirteen (13) cents to a second-class laborer; seven (7) cents to a third-class laborer.

Work on Saturday may, however, be ordered by the magistrate as a punishment to the laborer for having absented himself from work during the week for one whole day or more, and for having been idle during the week; and then the laborer shall not receive more than his usual pay for a common day's work.

PARA. 13. All the male laborers, tradesmen included, above 18 years of age, working on an estate, are bound to take the usual night watch by turns, but only once in ten days. Notice to be given before noon to break off from work in the afternoon with the nurses, and to come to work next day at 8 o'clock. The watch to be delivered in the usual manner by nightfall and by sunrise.

The above rule shall not be compulsory except where voluntary watchmen cannot be obtained at a hire the planters may be willing to give to save the time lost by employing their ordinary laborers as watchmen.

Likewise the male laborers are bound once a month, on Sundays and holydays, to take the day watch about the yard, and to act as pasturemen, on receiving their usual pay for a week-day's work. This rule applies also to the Crook-boys.

All orders about the watches to be duly entered in the day-book of the estate.

Should a laborer, having been duly warned to take the watch, not attend, another laborer is to be hired in the place of the absentee and at his expense, not, however, to exceed 15 cents. The person who wilfully leaves the watch or neglects it, is to be reported to the magistrate, and punished as the case merits.

PARA. 14. Laborers wilfully abstaining from work on a working day are to forfeit their wages for the day, and will have to pay, over and above the forfeit, a fine, which can be lawfully deducted in their wages, of seven (7) cents for a first-class laborer, five (5) cents for a second-class laborer, and two (2) cents for a third-class laborer.

In crop, on grinding days, when employed about the works, in cutting canes or in crook, an additional punishment will be awarded for wilful absence and neglect, by the magistrate, on complaint being made.

Laborers abstaining from work for half a day or breaking off from work before being dismissed, to forfeit their wages for one day.

Laborers not coming to work in due time to forfeit half a day's wages.

Parents keeping their children from work shall be fined instead of the children.

No charge of house rent is to be made in future on account of absence from work, or for the Saturday.

PARA. 15. Laborers wilfully abstaining from work for two or more days during the week, or habitually absenting themselves, or working badly and lazily, shall be punished as the case merits, on complaint to the magistrate.

PARA. 16. Laborers assaulting any person in authority on the estate, or planning or conspiring to retard or to stop the work of the estate, or uniting to abstain from work or to break their engagements, shall be punished according to law on investigation before a magistrate.

PARA. 17. Until measures can be adopted for securing medical attendance to the laborers, and for regulating the treatment of the sick and the infirm, it is ordered :

That infirm persons, unfit for any work, shall as hitherto be maintained on the estates where they are domiciled, and be attended to by their next relations.

That parents or children of such infirm persons shall not remove from the estate, leaving them behind, without making provision for them to the satisfaction of the owner, or of the magistrate.

That laborers unable to attend to work on account of illness, or on account of having sick children, shall make a report to the manager or any other person in authority on the estate, who, if the case appears dangerous and the sick person destitute, shall cause medical assistance to be given.

That all sick laborers willing to remain in the hospital during their illness, shall there be attended to at the cost of the estate.

PARA 18. If a laborer reported sick shall be at any time found absent from the estate without leave, or is trespassing about the estate, or found occupied with work requiring health, he shall be considered skulking and wilfully absent from work.

When a laborer pretends illness, and is not apparently sick, it shall be his duty to prove his illness by medical certificate.

PARA. 19. Pregnant women shall be at liberty to work with the small gang as customary, and when confined not to be called on to work for seven weeks after their confinement.

Young children shall be fed and attended to during the hours of work at some proper place, at the cost of the estate.

Nobody is allowed to stay from work on pretence of attending a sick person, except the wife and the mother, in dangerous cases of illness.

PARA. 20. It is the duty of the managers to report to the police any contagious or suspicious cases of illness and death, especially when gross neglect is believed to have taken place, or when children have been neglected by their mothers, in order that the guilty person may be punished according to law.

PARA. 21. The driver or foreman on the estate is to receive in wages four and a half dollars monthly, if no other terms have been agreed on. The driver may be dismissed at any time during the year with the consent of the magistrate. It is the duty of the driver to see the work duly performed, to maintain order and peace on the estate during the work and at other times, and to prevent and report all offences committed. Should any laborer insult or use insulting language towards him during or on account of the performance of his duties, such person is to be punished according to law.

PARA. 22. No laborer is allowed, without the special permission of the owner or manager, to appropriate wood, grass, vegetables, fruits, or the like, belonging to the estate, nor to appropriate such produce from other estates, nor to cut canes, or to burn charcoal. Persons making themselves guilty of such offences shall be punished according to law with fines or imprisonment with hard labor; and the possession of such articles not satisfactorily accounted for shall be sufficient evidence of unlawful acquisition.

PARA. 23. All agreements contrary to the above rules are to be null and void, and owners and managers of estates convicted of any practice tending wilfully to counteract or avoid these rules by direct or indirect means shall be subject to a fine not exceeding two hundred dollars.

P. HANSEN.

GOVERNMENT HOUSE,

St. Croix, January 26, 1849.

Colonel Raasloff to Mr. Seward.

DANISH LEGATION,

Washington, May 26, 1862.

SIR: I had the honor, in my note of April 23 last, to inform you that I was prepared to negotiate and to sign a special convention for the emigration of free negroes from this country to the Danish West India island of St. Croix, and beg leave now to add that I am likewise prepared to negotiate and to conclude a special convention for the transfer to that island of Africans who may hereafter be found on board of slavers captured by cruisers of the United States. The terms which, as stated in my above-mentioned note, I am authorized to offer to free negroes emigrating from this country to St. Croix would likewise, at least essentially and as a basis for the proposed negotiation, be applicable to captured Africans, with the exception only that these latter would have to serve an apprenticeship of a certain number of, say five, years, as 3d and 2d class laborers on a sugar plantation, during which time, however, they would in every other respect be treated entirely the same as the native free rural population. I shall, for the better understanding of this proposition, beg leave to refer to the memorandum which accompanied my note

of April 23 last, in which I described the condition of that population, and from which, as well as from the provincial act of July 26, 1849, a printed copy of which was annexed to that memorandum, it will be seen that laborers in St. Croix are, in regard to pay, divided into three classes, according to the amount and quality of labor which they are able to perform. The captured African, who generally is almost a savage, entirely unaccustomed to and unacquainted with regular agricultural labor, would therefore quite naturally and justly have to pass through the lower classes, and not become entitled to form part of the first class, which involves the highest pay, before having acquired the knowledge, ability, and physical strength and endurance of which full-grown men of the native free population of the island are generally possessed. The Danish laws by which the condition of that population has been regulated, and by which a happy existence has been secured to them, would thus, as you will perceive, be directly and justly applicable to the captured Africans, and be eminently proper, gradually and surely to prepare them for a rational enjoyment of entire freedom; every means for their instruction in the Christian religion and for the schooling of their children being also amply provided for; besides, the process of education and improvement would be greatly facilitated by their being made to live with an excellent and highly civilized colored population, and under the special protection of public authorities and magistrates appointed by the crown. I feel satisfied, therefore, that no other tropical country could offer, through its laws and the organization of its society, the same guarantees for the happiness and gradual civilization of the African who should be brought thither after having been rescued from the hold of a slaver, as those which I have above enumerated, and that the arrangement which I have the honor of proposing for the transfer of those people to this island of St. Croix would be entirely satisfactory from a Christian and a humane point of view, and would moreover relieve the United States from a great moral responsibility and from the very large expense which, if I am correctly informed, is connected with the present arrangement for the transfer of captured Africans to the territory of the republic of Liberia.

I avail myself of this occasion to offer you, sir, renewed assurances of my very high consideration.

W. RAASLOFF.

Hon. WM. H. SEWARD,

Secretary of State of the United States, Washington, D. C.

Mr. Seward to Colonel Raasloff.

DEPARTMENT OF STATE,

Washington, May 29, 1862.

SIR: I have had the honor to receive your note of the 26th instant on the subject of the transfer to Danish West India islands of persons of this country of African extraction, and of negroes found on

board vessels captured by United States cruisers. In reply I have to inform you that I am not authorized to accept, at this time, your proposition for a convention upon the emigration of free negroes. The disposition of captured Africans is now prescribed by law. It is possible, however, that Congress may be disposed so to modify the existing legislation upon the subject as to meet the wishes of your government. In order that it may be brought to the consideration of that body, I shall communicate a copy of your notes to the chairmen of the Committees on the Judiciary in the Senate and House of Representatives.

I avail myself of the occasion, sir, to offer to you a renewed assurance of my very high consideration.

WILLIAM H. SEWARD.

W. R. RAASLOFF, Esq., &c., &c., &c.

DEMAND TREASURY NOTES.

[To accompany bill H. R. No. 187.]

LETTER

FROM

THE SECRETARY OF THE TREASURY,

IN RELATION TO

The issue of an additional amount of United States treasury notes.

JUNE 11, 1862.—Ordered to be printed.

TREASURY DEPARTMENT,

April 7, 1862.

SIR: The act of July 17, 1861, authorized the issue of \$50,000,000 in United States notes, payable on demand and receivable for customs. This authority was enlarged, under the act of February 12, 1862, by the addition of \$10,000,000; making \$60,000,000 in all.

The acts of February 25, and March 17, 1862, authorized temporary deposits in the treasury, at rates of interest not exceeding five per cent., nor for a greater aggregate sum than \$50,000,000.

The act of February 25, 1862, authorized the issue of \$150,000,000 in United States notes, provided, however, that the demand notes issued under former acts should be retired and cancelled as rapidly as practicable, and that the aggregate of such notes and of the United States notes to be issued under this act should at no time exceed \$150,000,000. All the notes to be issued were made a legal tender, but none except the demand notes were made receivable for customs.

Under these laws, \$60,000,000 in demand notes receivable for customs have been issued, and \$90,000,000 in notes not so receivable.

The aggregate now outstanding is, therefore, \$150,000,000, being the whole amount authorized by law.

Of this aggregate, about \$56,500,000 in demand notes are held by banks and capitalists, and not used as circulation; being held at a premium, in consequence of their receivability for customs, of from $\frac{3}{4}$ to $1\frac{1}{4}$ per cent., and about \$3,500,000 are held in the Treasury for cancellation. The whole issue of \$60,000,000 in demand notes may thus be regarded as practically withdrawn from circulation.

This withdrawal leaves only the issue of \$90,000,000 of United

States notes not receivable for customs, increased gradually by the substitution of these notes for the demand notes cancelled, from which conversions into bonds redeemable after five years and payable in twenty years, (called, for convenience, *five-twenties*,) can be expected to be made.

The limit of temporary deposits is now reached, and nothing further can be expected from that source; for, so long as the limit shall be maintained, current receipts of such deposits can only equal the payments.

It is, therefore, upon the conversion of the United States notes into five-twenties—now practically limited to the \$90,000,000 of legal tender notes—and upon receipts from customs, that the treasury must depend, under existing legislation, for means to meet current expenditures.

No safe reliance can be placed on conversions, so far as experience has afforded any grounds of estimate, for more than \$150,000 daily; and the daily average revenue from customs, during the past month, has been about \$230,000.

The aggregate daily receipts from both these sources, therefore, cannot be estimated at more than \$380,000, and may very possibly fall short of that sum; while the average daily expenditure cannot be estimated at less than \$1,000,000, and will, probably, unless very considerable retrenchments are made, exceed that sum.

I therefore propose the removal of the restriction upon temporary deposits. The plan of receiving them has worked well, and is likely to continue to work well in practice. The rate of interest, limited to five per cent. by law, has been reduced to four by my direction, and it is not proposed to increase it unless some exigency shall make the increase necessary. The amount of deposits at four per cent. now exceeds \$9,000,000, and it will become steadily larger if the restriction be removed. Payments will, of course, be frequently required, but the pressure must be very great which will reduce receipts below them; while, in ordinary times, the latter will constantly exceed the former. It may, indeed, become practicable to reduce the rate of interest even below four per cent. with advantage. Whatever the rate allowed, the average excess of deposits above reimbursements will constitute a loan to the government at that rate.

In order to retain this average excess at its maximum, it may be well to provide by law that, of the United States notes hereafter authorized to be issued, there shall be always reserved in the treasury, or from issue, an amount not less than one-third the amount deposited. Such a provision would make the treasury the best of savings banks, and, by its guarantee of prompt payment under all circumstances, inspire the highest confidence, and augment to its maximum the flow of deposits. I estimate the amount of loan likely to be made to the government at four per cent. or less, in this form, at not less than \$30,000,000, in addition to the \$50,000,000 already deposited.

I propose, also, that authority be given to the Secretary of the Treasury to issue \$150,000,000 in United States notes, in addition to the issue already authorized, and that these be made a legal tender

for debts, except interest on loans, and receivable in payment of all loans to the United States, and for all government dues except duties on imports and interest.

If this authority be given, the proposed reserve of an amount (say \$34,000,000) not less than one-third the temporary deposits, and the replacement of that portion of the \$60,000,000 of demand notes (say \$56,500,000) now practically withdrawn from circulation and held for payment of customs, will require, for the present, at least, say \$90,500,000 of the proposed additional issue; leaving as an actual present addition to the resources of the government only \$59,500,000. This amount, however, gradually increased, as it will be, by the retirement of the demand notes paid in for public dues, and the replacement of them by other United States notes, will, probably, suffice for all demands which cannot be met from conversions and from customs.

If Congress shall see fit to authorize the additional emission proposed, it seems highly expedient that such part as the public convenience shall require be issued in denominations less than five dollars.

I am aware of the general objections to the issue of notes under five dollars, and concede their cogency. Indeed, under ordinary circumstances, they are unanswerable. But in the existing circumstances of the country they lose most, if not all, their force.

The country is involved in the expenditures of a contest for national existence, and it is highly desirable that the burdens of the people be made as tolerable as possible. If the restriction on the issue of small denominations be removed, the wants of the country will absorb a circulation of \$25,000,000, and perhaps more. The interest on this circulation, say \$1,500,000 a year, will be saved to the taxpayers.

Payments to public creditors, and especially to soldiers, now require large amounts of coin to satisfy fractional demands less than five dollars. Great inconveniences in payment of the troops are thus occasioned. With every effort on the part of the treasury to provide the necessary amount of coin, it is found impracticable always to satisfy the demand. When the amount required is furnished, the temptation to disbursing officers to exchange it for any small bank notes that the soldiers or the public creditors will take, is too great to be always resisted. And even when the coin reaches the creditors it is seldom held, but passes, in general, immediately into the hands of sutlers and others, and disappears at once from circulation. The inconveniences, therefore, to the government and creditors, from the absence of United States notes of small denominations, are not compensated by benefits to anybody.

It may properly be further observed that since the United States notes are made a legal tender, and maintained nearly at the par of gold by the provision for their conversion into bonds bearing six per cent. interest, payable in coin, it is not easy to see why small notes may not be issued as wisely as large ones. The notes made a legal tender circulate as money; and the government may authenticate, by device and imprint, small notes as well as small coins. The limit is

to be found only in public convenience, which indicates denominations in notes similar to denominations in gold, leaving the smaller circulation of silver (less valuable than gold) as before.

Another consideration which deserves to be taken into the account is this: that resumption of payments in specie can be more certainly and easily effected, and with far less of inconvenience and loss to the community, if the currency, small as well as large, is of United States notes, than if the channels of circulation are left to be filled up by the emissions of non-specie-paying corporations, solvent and insolvent.

These considerations of economy, of public advantage, and of private convenience, seem to me to justify fully the removal of the restriction upon the issue of small notes.

I propose, further, to make arrangements for the necessary engraving and other work for the printing and preparation for issue of these notes in the Treasury Department at Washington. I am led to believe that a very considerable reduction of expense can be thus effected. The prospect, in my judgment, certainly warrants the trial.

With these objects I have prepared a bill, which I herewith submit to the consideration of the committee. The condition of the treasury renders prompt action highly desirable; and I trust it is not necessary to assure the committee or Congress that, should the powers asked for be granted, they will be exercised only with the most careful reference to the requirements of the public interests. Whatever the authority granted may be, no issue of notes will be made except to replace notes withdrawn and cancelled, and to meet the current expenditures authorized by Congress, which cannot be met from the receipts of revenue, from the increase of deposits, and from the proceeds of the conversion into five-twenties.

With great respect,

S. P. CHASE,
Secretary of the Treasury.

HON. THADDEUS STEVENS,
Chairman Committee of Ways and Means.

IRON-CLAD SHIPS, ORDNANCE, &c., &c.

LETTER

FROM

THE SECRETARY OF THE NAVY,

ADDRESSED

*To the Committee on Naval Affairs, in relation to iron-clad ships,
ordnance, &c.*

JUNE 13, 1862.—Ordered to be printed, and recommitted to the Committee on Naval Affairs.

NAVY DEPARTMENT,
March 25, 1862.

SIR: In my report of July 4, 1861, submitted with the President's message to Congress, I had the honor to present to the consideration of that body, and the country, the matter of iron-clad steamers for naval purposes. A sum of money was appropriated at that session to build "one or more armored, or iron or steel clad ships, or floating batteries." This appropriation, intended as experimental, resulted in ordering three armored vessels of different construction. One of these three has been built under a contract with this department, and arrived at Hampton roads in time to be of great service to the country in driving into port the iron-clad steamer Merrimack, which was in the possession of the rebels, and had by them been clad in armor. This memorable engagement is the first which has taken place between vessels protected with iron, and the results to be deduced from it are so important that I feel impelled to submit some general views, in writing, to your committee.

Firstly. Steam has become such an indispensable element in naval warfare, that naval vessels propelled by sails only, are considered useless for war purposes. The last sailing vessel built for the navy was the Constellation, commenced in 1853, and completed in August, 1855.

Secondly. Steam vessels-of-war, unless protected from the enemy's shot and shell, can make but feeble resistance to, and must surrender when assailed by, an iron-clad vessel.

Thirdly. The navy as it exists at present, cannot successfully contend against a power employing iron-clad vessels, and consequently cannot meet the requirements of the country.

Fourthly. I deem it imperative that we should forthwith commence the construction of armored vessels on a scale commensurate with the great interests at stake.

Fifthly. The department, under date of February 20, 1862, advertised for plans, which are now being received, developing the ingenuity and skill of our countrymen, and I have faith they will produce models for a class of vessels for home defence, and for sea service, that will secure to our country equality, if not pre-eminence in naval construction.

Sixthly. The heaviest ordnance in present use is not sufficiently heavy and powerful to break and destroy the armature now placed upon vessels. We shall therefore be compelled to increase the calibre of our guns until a size be attained which will crush every armature that can be borne by any vessel. I have already given orders to construct 15 and 20-inch guns, but their manufacture is attended with great difficulties and requires the highest skill to attain success. There are but few establishments in the country willing to undertake the manufacture of these guns, and they can produce but a small number. It is therefore earnestly requested that an appropriation of \$500,000 be made to extend the grounds and to build furnaces at the Washington navy yard, where some of the lathes and turning machines are already in operation. In that event the anchors and cables now manufactured at that yard should be transferred to some other station, leaving nothing to be manufactured but guns, ordnance stores and matters pertaining thereto. A civil assistant to the ordnance of the yard at a salary of \$1,800 per annum, one clerk at \$1,400 and one clerk at \$1,200 per annum, are recommended.

Seventhly. The department proposes to construct a few vessels of light draught, great speed and heavy armament for the western waters; also a class for harbor defence and to operate upon the Atlantic coast and in the Gulf of Mexico, which shall be as far as possible invulnerable, each armed with 15-inch guns, and, finally, it proposes to attempt an ocean steamer possessed of the same sailing and armored properties, armed with guns of 20-inches calibre. The two latter classes also to be used as rams.

Eighthly. Assuming that an enemy can always construct guns and vessels similar to our own, and that he can also attack us upon the seaboard with a superior naval force concentrated at the point selected to be attacked, and that forts, however skilfully constructed, and whatever the calibre of the guns mounted thereon, cannot be relied upon to sink every iron-clad vessel which attempts to pass the line of fire at high speed, it becomes absolutely essential that we should resort to mechanical means to obstruct our ports at the points where the forts are constructed. The attention of our people once invited to such a project will no doubt give us a simple plan to do this at will without injury to the harbor or hindrance to commerce.

Ninthly. I ask the committee to consider the important subject of

producing iron plates for the armature of vessels. It is believed there are but few, if any, mills in the country capable of rolling plates over two inches in thickness, and these cannot be produced in very large quantities. The demands of the government will be likely to raise the price of these plates so as to render the vessels more expensive than under ordinary circumstances would be the case. Under these circumstances shall the government, under proper restrictions, advance money to some well-known establishment to enable the proprietors to put up the necessary buildings and machinery? Shall one of the navy yards be selected in which to erect the works called for under the change in naval armaments, or shall a new point be selected and the foundation laid for an establishment, meeting all the requirements of an iron navy? Forging for heavy shafting is also requisite, and some measures in regard to such an establishment seem indispensable in connexion with the other plans suggested. The qualities of iron that may be used for armature is a matter of great importance, the iron produced at some mines being capable of vastly greater resistance to projectiles than others. An investigation with practical tests as to the quality of iron in different localities, with a view of selecting that which is best adapted to the purposes of government, would be highly useful. I would also request an appropriation of \$100,000 for targets and experimental practice. Finally, I would ask that the sum of \$30,000,000, including the appropriations already made the present session, be appropriated for iron-clad vessels, heavy ordnance and plating any naval vessels already in the service, should such a course be deemed advisable.

I am, very respectfully, your obedient servant,

GIDEON WELLES.

Hon. C. B. SEDGWICK,

Chairman Naval Committee, House of Representatives.

NAVY DEPARTMENT, *June 9, 1862.*

SIR: I had the honor to address the naval committee, under date of the 25th of March last, on the subject of armed ships, and the necessity of preliminary measures in the future construction of vessels for the naval service. The fact that a radical change has commenced in the construction and armament of ships—which change, in effect, dispenses with the navies that have hitherto existed—is obvious; and it is a question for Congress to decide whether the government will promptly take the initiatory steps to place our country in the front rank of maritime powers.

It is unnecessary that I should recapitulate the suggestions contained in my letter of the 25th of March; but I would again call your attention to them, and state my earnest desire that Congress should take action, before its adjournment, on the subject, not only by supplying itself with the armature and heavy ordnance for ships, but of the substitution, by the government, of iron for wood, in whole or in part, in the construction of naval vessels. It has hitherto been sup-

posed to be the true interest of the government to build its own ships-of-war, and to manufacture the arms and most of the articles which are requisite for the naval service. This necessity has arisen chiefly from the fact that naval vessels and naval purposes and objects are in many respects so essentially different from those of the mercantile marine as to place them out of the usual line of private enterprise. The government has, consequently, to pay an extra cost for extra and better work. In naval and military matters it is indispensable that vessels, guns, machinery, and everything pertaining to them, should be of the best quality, reliable and always ready at any moment to meet the public necessities.

The government has several large navy yards for building ships; and the introduction of steam, which is necessary for and made applicable to, all naval vessels now constructed, has compelled it to erect extensive shops for making steam machinery. But these shops are inadequate to the wants of the navy, and for some years it will be necessary, under any circumstances, to contract for much the larger portion of the work that will be required.

It is now generally conceded that vessels for fighting purposes must be heavily plated with iron, if they are not built entirely of that material. In this, as in most costly fabrics, economy is reached through durability. Iron ship-building is new in this country; but few persons are engaged in it, and it is a novelty in our yards. Heavy iron beams, shafting, and thick iron plates can be procured from only two or three parties, and then in limited quantities, and subject to great delay. Individuals have little use for iron of such magnitude as the navy must have, and there must unavoidably be great outlay to prepare for the execution of such work. With only the navy for a purchaser there can be no competition, and the government will be compelled, under such circumstances, to pay almost any price the mills and forges may demand. No inconsiderable portions of an iron ship can be made and procured at the ordinary mills, and so far as it can be done, it may be the best policy to be so supplied; but the heavy and expensive portions cannot be so procured, and unless the government is prepared to execute the work, it will be subject to imposition and its vessels to marked inferiority.

Other nations, whose wooden ships-of-war far exceed our own in number, cannot afford to lay them aside, but are compelled to plate them with iron at a very great cost. They are not unaware of the disadvantage of this proceeding, but it is a present necessity. It must be borne in mind, however, that those governments which are striving for naval supremacy are sparing no expense to strengthen themselves by building iron vessels; and already their dock yards are undergoing the necessary preparation for this change in naval architecture, notwithstanding those governments have at their command the greatest experience and the most extensive and complete iron and machine factories that private enterprise can produce. These facts are suggestive to our government; and I desire to call your attention to the necessity of making the necessary provision for ourselves, by providing the means and conveniences for building and repairing a

navy, such as the strength and character of our government and country require, in order to maintain its true position among maritime powers.

We have been engaged for years, and have spent millions in our navy yards, and on our steam machine shops for ship-building purposes, and yet have not been able to keep up with the wants of the navy, and the exigencies of the service.

It is not the part of wisdom, to close our eyes to the progress of events, nor to evade the responsibilities that properly belong to us. The creation of a new and different navy, such as the development of science and art already demonstrate as a necessity, calls for vigorous measures and prompt and energetic action. The government should not, in justice to itself, be dependent on private establishments for its most important and expensive works, but should rely upon itself. Great works, however, require time in their preparations, and lavish expenditures cannot hasten them. Congress has been liberal in its appropriations for building vessels, but these appropriations cannot be made available in obtaining the proper locations, and mills, forges, furnaces, and shops, all of which are requisite, and which, to be secured properly, need time and careful consideration.

If the money for these purposes be now appropriated, we shall commence, under as favorable circumstances as any nation, the construction of a navy adapted to the wants of our country and the times. No nation can have an advantage over us, if we avail ourselves of our means and opportunities, and it is no longer doubtful that our future safety and welfare are dependent on our naval strength and efficiency. It is a duty as well as a necessity that we make these United States a great naval power. We owe it to ourselves to commence at once this work, and the present Congress should, in my opinion, take the preliminary steps at the present session for laying the foundation for the construction of a navy commensurate with the wants and magnitude of the country. The place or places, the shops and tools, and other appurtenances for this great work, must be provided in season. The experience we have had admonishes us not to permit a war to come upon us unprepared; yet such an event may be pending, and the responsibility and calamities that would follow neglect, should be a warning for us to be prepared. No amount of money would repair the wrong that might be inflicted from present neglect. A million or two of dollars, judiciously expended at the present time, may save hundreds of millions, and the honor of the nation, after hostilities shall have commenced.

I have made these suggestions, in consequence of the near termination of the session, without any movement, as yet, for establishing the necessary works to produce the heavy iron and armature that will hereafter enter into the construction of our naval vessels. It is doubtful whether either of our present navy yards is best adapted to the purpose herein indicated, but if so, they will require considerable enlargement. The subject is one that should receive careful consideration, and I would suggest that authority be given to designate and procure one or more suitable locations. We are now construct-

ing a number of gunboats by contract on the western waters, and I would suggest that recent experience and the vast resources in iron and other capabilities of the west, with the radical change in naval architecture, demonstrate the propriety of establishing a navy yard, foundry, and shops, at some point in the valley of the Mississippi. Such a yard, and its attendant establishments, would possess many advantages, and is becoming a necessity. I commend it to your attention, with the other subjects alluded to in this communication.

I have the honor to be, very respectfully, your obedient servant,
GIDEON WELLES,

Hon. C. B. SEDGWICK, *Chairman of*
Committee on Naval Affairs, House of Representatives.

PREPARED IN THE PENITENTIARY BY SENTENCE OF
COURT'S MARCH.

LETTER

THE ATTORNEY GENERAL.

The rights of the individual of prisoners in the penitentiary of the State
of Colorado, by sentence of court's March.

1892-1893. - Printed by the Committee on the Judiciary and signed by the member.

Attorney General's Office, May 8, 1893.

Dear Sir: - I have the honor to acknowledge the receipt of your letter of the 27th inst. in relation to the rights of the individual of prisoners in the penitentiary of the State of Colorado, by sentence of court's March. I have the honor to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
Yours very truly,
J. H. HARRIS, Attorney General.

I have the honor to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
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PRISONERS IN THE PENITENTIARY BY SENTENCE OF
COURTS-MARTIAL.

LETTER

FROM

THE ATTORNEY GENERAL,

ON

The legality of the confinement of prisoners in the penitentiary of the District of Columbia, by sentence of courts-martial, &c.

JUNE 12, 1862.—Referred to the Committee on the Judiciary, and ordered to be printed.

ATTORNEY GENERAL'S OFFICE, *May 8, 1862.*

SIR: That courts-martial, in cases within their lawful jurisdiction, may condemn persons to imprisonment at hard labor in the penitentiary of the District of Columbia, in punishment of crime, is too well settled to be now open to question; and the power of such courts to impose that punishment is derived not from the decisions of the Supreme Court, referred to in your letter of the 2d instant, but from the act of Congress which declares the purposes to which the penitentiary of the District shall be devoted, and the acts which confer the jurisdiction and define the powers of courts-martial.

The first section of the act of March 3, 1829, (4 St. 365,) enacts that the penitentiary of the District of Columbia "shall be exclusively appropriated to the confining such persons as may be convicted of offences which now are or may hereafter be punishable with imprisonment and labor under the laws of the United States or of the District of Columbia." The right of Congress to declare it the receptacle of persons convicted under the laws of the United States will hardly be questioned, in view of the fact that this penitentiary was built and is supported with the money of the United States, and is as much under the control and direction of the national government as is the Capitol or the treasury building.

Nothing in the language of the act of 1829 justifies the inference that Congress meant to prohibit the confinement of offenders con-

victed and sentenced by courts-martial in the penitentiary of the District. True, it is restricted to the confinement of those who may be convicted of offences punishable with imprisonment at hard labor under the laws named. But courts-martial have power in many cases under the laws of the United States to inflict this punishment; in illustration of which I refer you to *Dynes vs. Hoover*, (20 How. 65;) *Crowell's case*, (Man. Op. of Att'y Gen. Black, September 5, 1857;) and an opinion of my own in *Toombs's case*, furnished to the Secretary of the Navy on the 8th of November last. As I had occasion in that opinion to examine the question of the power of a court-martial to sentence a marine in the service of the United States to imprisonment at hard labor for a term of years in the penitentiary of the District of Columbia, I take the liberty to enclose you a copy of it herewith. Although in these cases the main question was of the power of courts-martial to punish by imprisonment at hard labor in the penitentiary at all, yet the incidental question of the legality of such punishment by imprisonment in *the penitentiary of the District of Columbia* was also involved; for the legality of that form of punishment under the laws of the United States being established, the right to use the penitentiary of the District, under the terms of the act of 1829, designating the class of persons who might be confined therein, necessarily followed; and, in point of fact, in all the cases I have cited, the persons under sentence were confined in that penitentiary.

It is not necessary in all cases that the sentence of the court-martial imposing the punishment in question should be approved by the President. The articles of war prescribe certain cases, even where the punishment of death is not pronounced, where the sentence must receive the President's approval before it can be executed; but except in these cases I am aware of no rule which requires the special intervention of the President to authorize the admission into the penitentiary of the District of a prisoner lawfully convicted and sentenced thereto by a court-martial, with the approval of the proper authority under the articles of war.

I am, sir, very respectfully, your obedient servant,

EDWARD BATES,
Attorney General.

Hon. C. B. SMITH,
Secretary of the Interior.

ATTORNEY GENERAL'S OFFICE, November 8, 1861.

SIR: I have the honor to acknowledge the receipt of your letter of the 4th instant relative to the case of Corporal William Toombs, of the marine corps. It appears that at a marine general court-martial, convened by order of the Navy Department, he was tried under article 12 of section 1 of the act of April 23, 1800, (2 St. 45,) for the better government of the navy, upon the charge of endeavoring to corrupt two privates belonging to a marine guard on board a steamer convey-

ing State prisoners to Fort Lafayette, by offering them a large pecuniary reward if they would assist him in effecting the escape of certain of the prisoners; and that the court found him guilty of the charge and sentenced him to be imprisoned for a term of years at hard labor in the penitentiary of the District of Columbia. Under these circumstances you have done me the honor to submit for my consideration certain papers on the subject, and to request my opinion as to the legality of the sentence.

As you have not deemed it necessary to furnish me with a copy of the record of the proceedings of the court-martial in this case, and as I understand your question to refer to the legality of the sentence in respect to the single objection urged against it in the accompanying papers, I shall proceed to consider that point only, abstaining from any expression of opinion as to the legality of the sentence in any other respect.

The objection to the sentence of the court-martial in this case is, that the punishment of imprisonment in the penitentiary for a term of years, at hard labor, is contrary to the usages of the service, and is therefore illegal.

The 12th article of the rules for the government of the navy, under which this sentence was pronounced, declares that "spies, and all persons who shall come or be found in the capacity of spies, or who shall bring or deliver any seducing letter or message from an enemy or rebel, or endeavor to corrupt any person in the navy to betray his trust, shall suffer death, or such other punishment as a court-martial shall adjudge."

In this case the prisoner was convicted of one of the gravest offences enumerated in the calendar of naval crimes, and he has much more reason to congratulate himself that the court did not award to him the extreme penalty of the law than to complain that his punishment is contrary to the usage of the service. Where death is one of the penalties affixed to the commission of a crime, most persons, after conviction, would be glad to accept any lower degree of punishment, but it seems that in this case the prisoner is unwilling to make even the expiation which is commonly required for the lowest grade of felonies. But he is entitled to the benefit of an answer to the objection he has interposed, and I proceed to give it.

The rule which he has invoked for his protection is unquestionably correct, that the words "such other punishment as a court-martial shall adjudge" are to be limited by the custom of the service, and authorize only such punishments as are usual.—(Hickman, Nav. Court-mar., 150; Macomb, C. M., sec. 138; Kennedy, 176; De Hart, 69.) Cruel and unusual punishments are not only forbidden by the law martial but by the Constitution of the United States, and if the punishment in the present case fall within that category the prisoner ought not to invoke the rule in vain.

Is, then, the punishment by imprisonment for a term of years at hard labor in the penitentiary, for the offence of endeavoring to corrupt marine privates, in charge of State prisoners, to betray their trust, against the usage of the service?

It is said by Delafous, (Treat. Nav. Courts-martial, 286,) the words "such other punishment as the nature of the offence shall deserve and the court-martial shall impose, (which in the act of the 22d Geo. II are the equivalent of the words used in the 12th and other articles of our act of 23d April, 1800,) are expressions of great and almost unbounded latitude." It is certainly hard to mark the line where usual and proper punishments end, and unusual and cruel ones begin, and the sentence pronounced under an authority so broad and general ought to be so far out of proportion to the offence committed as to shock the sense of justice, before it is arrested as contrary to usage. If it bear a just relation to the crime, and be not utterly outside of the circle of naval punishments, any interference with it on that ground could hardly be justified. No man can say that imprisonment at hard labor in the penitentiary is punishment too severe for a crime to which the law affixes the penalty of death, as it does in this case; and we are therefore limited to the inquiry whether there are any instances in the history of naval courts-martial of the infliction of this form of punishment. If such precedents can be found the objection urged to the sentence pronounced against Toombs is utterly groundless.

In our own navy it is a punishment that has been repeatedly imposed. In 1854 Dynes and others were tried by a naval court-martial, and sentenced to imprisonment at hard labor in the penitentiary of the District of Columbia. These sentences were approved by the Secretary of the Navy, and carried into execution in the usual way. Dynes brought an action against the marshal of the District for assault and battery and false imprisonment, which reached the Supreme Court of the United States.—(Dynes *vs.* Hoover, 20 Howard, 65.) One of the questions raised was as to the legality of the punishment inflicted on the plaintiff. Judge Wayne, delivering the opinion of the court, said: "If a court-martial has no jurisdiction over the subject-matter of the charge it has been convened to try, *or shall inflict a punishment forbidden by the law*, though its sentence shall be approved by the officers having a revisory power of it, civil courts may, on an action of a party aggrieved by it, inquire into the want of the court's jurisdiction and give him redress."—(Pages 82-3.) And he further said: "In this case all of us think that the court which tried Dynes had jurisdiction over the subject of the charge against him; *that the sentence of the court was not forbidden by law*; and that, having been approved by the Secretary of the Navy, *as a fair deduction from the 17th article of the act of 23d April, 1800,*" (which in this respect is similar to the 12th article,) "and that Dynes having been brought to Washington as a prisoner, by direction of the Secretary, that the President of the United States, as constitutional commander-in-chief of the army and navy, &c., violated no law in directing the marshal to receive the prisoner Dynes, &c., for the purpose of transferring him to the penitentiary of the District of Columbia."

If the punishment by imprisonment at hard labor in the penitentiary were regarded as contrary to the usage of the naval service, it would, for that reason, as we have already seen, be forbidden by law.

But the court, in *Dynes vs. Hoover*, having decided that it is not forbidden by law, it follows that it is not a punishment contrary to the usage of the service. If this decision stood alone, it would be sufficient to vindicate the sentence against Toombs from the objection made to it. But it is further sustained by the case of Charles Crowell, a seaman who was convicted for striking, disobeying, and treating with contempt his superior officers, and sentenced to three years confinement at hard labor in the penitentiary of this District. This sentence being referred to Attorney General Black for his opinion, as to its legality, received his approval, (Man. Op., No. 30, September 5, 1857.) Our naval records furnish other instances of the same sentence pronounced by naval courts-martial against convicted offenders, and although they were not always carried into effect, I am not aware that the failure to do so resulted from any doubt of their legality.

But the chief authority on which the prisoner relies to sustain his objection is a case mentioned by Hickman, 266, where, in 1797, the members of an English naval court-martial requested the opinion of the attorney general, solicitor general, and the counsel for the admiralty, whether, in cases where, by the act 22 Geo. II, c. 33, they have the discretionary power of punishing with death or such other punishment as they shall deem the prisoner to deserve, the court had power to sentence the prisoner to transportation, solitary imprisonment, or hard labor, or to inflict other than the usual corporal punishment or imprisonment for any term not exceeding two years, and they received for answer that the 3d section of the act 22 Geo. II limited the sentence of imprisonment to two years, and as to their discretionary power of inflicting such other punishment except death as the court should deem the prisoner to deserve, the opinion was that the discretion must be limited by the usage of the service with respect to sentences of that kind, and that the court would not pronounce the sentence of transportation, hard labor, or any sort of imprisonment except such as had been usual.

It may be proper to observe here that the limitation of the length of imprisonment contained in the act of 22 Geo. II, and subsequent English statutes, have not been inserted in our laws; the only limitation of that kind being on the punishment of imprisonment inflicted by summary courts-martial under the act of 2d March, 1855, (10 Stat., 627.)

But whether these British law officers meant to pronounce the sentence of imprisonment at hard labor unusual and illegal during the last century or not, it is certain that the records of both naval and military courts-martial in England, since that time, show it to be one of the most frequent and usual methods of punishing offences of a grade similar to that of which the prisoner in this case is convicted.

In the abstract of the proceedings of English naval courts-martial contained in Hickman (p. 210) I find six cases where the sentence pronounced was imprisonment at hard labor, and several where the sentence was solitary confinement. The offences for which these punishments were inflicted were desertion, mutiny, and other offences

placed by the act of 22 Geo. II, c. 33, in the same grade as that in which the offence of Toombs is ranked by the act of Congress of 1800.

Imprisonment, with or without hard labor, is one of the punishments imposed by the British mutiny act; and General Macomb, an American authority of weight, declares the usual inferior punishment of a soldier to be imprisonment, solitary or otherwise, hard labor, and stoppage of pay.—(Courts-mar., sec. 142.)

It thus appears that punishment by imprisonment at hard labor for offences like that of which the prisoner is convicted is sanctioned by usage and authority in England and America, and has become one of the most frequent methods of vindicating the rules of the naval and military service.

I am therefore of opinion that the sentence pronounced by the court-martial against Corporal William Toombs is free from the objection urged against it in the papers you have submitted to me, and that nothing therein contained affords any reason why that sentence should not be confirmed.

I am, sir, very respectfully, your obedient servant,

EDWARD BATES,
Attorney General.

HON. GIDEON WELLES,
Secretary of the Navy.

ATTORNEY GENERAL'S OFFICE, *May 9, 1862.*

SIR: A letter from the Assistant Secretary of War, Mr. Watson, to the Secretary of the Interior, (referred, with other documents, to this office,) contains an extract from a report from you to the Secretary of War on the subject of the confinement of prisoners in the penitentiary of the District of Columbia by the sentence of courts-martial. After referring to the authority on which such prisoners are committed, you say: "I understand, but have not seen it, that there is a recent opinion in the matter, by the Attorney General, against the power of a court-martial."

As you have evidently been misinformed in regard to the Attorney General's action, and as the subject is one of some importance, and it is therefore desirable that you should be advised of the opinion of the chief law officer of the government, I have taken the liberty to enclose to you herewith:

1st. An opinion of the Attorney General, in response to a letter of the Secretary of the Navy, as to the power of a navy court-martial to sentence a marine to imprisonment at hard labor in the penitentiary for a term of years; and,

2d. An opinion of the Attorney General, in response to a letter of the Secretary of the Interior, on the question of the right to use the penitentiary of this District for the incarceration of prisoners sentenced by courts-martial.

You will see that the Attorney General not only sustains the legality

of that form of punishment, but also the right to use the penitentiary of the District for that purpose.

I am, sir, very respectfully, your obedient servant,

TITIAN J. COFFEY,

Assistant Attorney General.

Major JOHN F. LEE,

Judge Advocate.

HISTORIC MEDALS FOR MAJOR ANDERSON, HIS OFFICERS AND MEN.

JUNE 13, 1862.—Committed to the Committee of the Whole House on the state of the Union, and ordered to be printed.

Mr. F. P. BLAIR, jr., from the Committee on Military Affairs, reported back the following preamble and resolutions of the House, of the 11th instant:

CONGRESS OF THE UNITED STATES.

IN THE HOUSE OF REPRESENTATIVES,
June 11, 1862.

Mr. WHALEY submitted the following, which was referred to the Committee on Military Affairs:

Whereas the House of Representatives of the Congress of the United States have made no suitable acknowledgement of the services of Major Anderson and his gallant band at Fort Sumter and Charleston harbor; and whereas General Anderson's bold, and patriotic, and fearless acts have been justified by this House; and whereas it is an appropriate custom to commemorate and perpetuate such worthy deeds by suitable medals for encouragement to the patriotic, therefore—

Resolved, That the House of Representatives hereby expresses its high sense of the services rendered by Major Anderson and his command to the cause of the nation and the Union by their fearless conduct and patient sufferings.

Resolved, That a committee of three be appointed, who shall cause to be executed and presented to Major Anderson and his officers and soldiers who were at Fort Sumter suitable medals, historic in character and appropriate in composition—gold for officers, and silver for men.

Attest:

EM. ETHERIDGE, *Clerk*.

PROPOSED AMENDMENTS TO THE POSTAL LAWS.

LETTER

FROM

JOHN A. KASSON, ESQ.,

FIRST ASSISTANT POSTMASTER GENERAL,

TRANSMITTING

Drafts of bills for proposed amendments to the postal laws.

JUNE 13, 1862.—Referred to the Committee on the Post Office and Post Roads, and ordered to be printed.

POST OFFICE DEPARTMENT, APPOINTMENT OFFICE,
Washington, June 11, 1862.

SIR: By direction of the Postmaster General, I have the honor to transmit, herewith, for the consideration of your committee, drafts of two amendments to the postal laws.

The necessity and propriety of the amendments proposed on the paper marked No. 1 will doubtless suggest themselves to your mind when you recollect that the secession of these States has put an effectual stop to all legal proceedings there in behalf of the United States, and that unless something of this kind is done the sureties of all the postmasters in these States will be exonerated from liability on their bonds before the department can take the ordinary legal steps to collect its revenues, and that from the same cause there cannot be found a loyal (or any) magistrate to administer oaths to officers appointed by the department, as the country is reclaimed to the Union.

The necessity of the proposed amendment marked No. 2 has been suggested by the fact that claims of a doubtful character, arising under old and almost obsolete laws, are not unfrequently *dug up by claim agents* (where the postmasters themselves have never made any claim) and urged with such pertinacity as to throw a large amount of labor

upon the department. To save this labor, and to avoid the allowance of improper claims, this limitation to their presentation is deemed just and proper.

I am, very respectfully, your obedient servant,

JOHN A. KASSON,
First Assistant Postmaster General.

Hon. S. COLFAX,
Chairman Post Office Committee, House of Representatives.

No. 1.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the limitation upon the liability of and suits against the sureties of postmasters, as provided in the third section of the act of Congress entitled "An act to reduce into one the several acts establishing and regulating the Post Office Department," approved March 3, 1825, so far as applicable to postmasters appointed in the States of Virginia, North Carolina, South Carolina, Florida, Georgia, Alabama, Mississippi, Louisiana, Tennessee, Arkansas, and Texas, is hereby repealed.

SEC. 2. *Be it further enacted,* That whenever it is now required by law that any contractor, postmaster, clerk, or employé of the Post Office Department shall take an oath before he is qualified to enter upon the discharge of his duties, or subsequently thereto, such oath, in any of the States in the first section hereof mentioned, may be taken before any commissioned officer of the United States, civil or military, who may be conveniently accessible to him, in either of the said States; and such officers, civil and military, are authorized, for the purposes aforesaid, to exercise the functions of a magistrate.

No. 2.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That no special allowance shall be made to any postmaster, contractor, or other officer or employé of the Post Office Department, unless the claim therefor shall have been presented to the proper officer of that department for allowance within one year from the time when such claim accrued.

ST. THOMAS'S EPISCOPAL CHURCH.

[To accompany bill H. R. No. 541.]

PETITION AND PAPERS

IN RELATION TO REPAIRS OF

ST. THOMAS'S EPISCOPAL CHURCH,

AT

Hancock, Maryland.

JUNE 23, 1862.—Ordered to be printed.

To the honorable the Senate and House of Representatives in Congress assembled, greeting :

The undersigned, vestrymen, members, and parishioners of St. Thomas's Protestant Episcopal Church, of Hancock, Washington county, Maryland, do pray relief of your honorable bodies for the damages received to their church and rectory.

Said church being situated in the town of Hancock, and being, on the 4th day of January, 1862, in a good state of repair, with sound walls and good furniture ; and being located upon a good site for defence in case of attack from rebel cannon placed upon the heights on the Virginia side of the Potomac, said church was made to protect a cannon placed in its rear by Lieutenant Muhlenburg, of company F, fourth regiment of artillery, United States army, during the bombardment of the town on the night of the 4th and the day of the 5th of January, 1862.

Your petitioners would humbly state that by the concussion of said cannon the walls of said church were much shaken and seriously damaged ; the cupola thrown from a perpendicular, and the gallery loosened from its fastening in the wall ; the ceiling so loosened as to be dangerous to a congregation, and the gothic windows and blinds much broken up thereby. These serious damages were added to by the quartering of companies of the one hundred and tenth, eighty-fourth, and forty-sixth regiments of Pennsylvania volunteers, and companies of the nineteenth and twenty-eighth regiments of New

York. These soldiers destroyed the furnishing of the pews, broke many of them up, destroyed a number of the venetian blinds, the furnace, the furniture of the vestry-room, and the Sunday school library, with other serious damages, such as the burning of the entire fence of the grave-yard, and part of that of the parsonage, &c.

Your petitioners would represent that these damages have deprived them of a place of worship and caused serious loss to them, which they are not able to repair, and which, if your honorable bodies do not soon aid them in repairing, must tend to still further injury to the buildings. Your petitioners are now and always have been loyal to the government and hospitable to the troops quartered in the town, and have had in their church, by its rector, the duties of allegiance to and support of the government strongly enforced. So much has this church maintained this ground, that this deprivation of a place to worship is the loss to this community of the conservative influence, as well as religious privileges we so much need.

The vestry of said church have had estimates made under oath by competent workmen of the damages done their property, and find the sum thereof to amount to two thousand one hundred and sixty dollars, (\$2,160,) which sum they find necessary to repair the damages and restore the property to its former condition, as near as may be.

Your petitioners humbly pray that this amount of aid be rendered them by especial appropriation. They are constrained to ask it, to save further damage, by the necessary delay of military commissions.

For this needed aid we will ever humbly pray. The estimates accompany the petition.

Rev. DAVID J. LEE, M. D.,
Rector of St. Thomas's Church.

HANCOCK, MD., *March 15, 1862.*

James A. Swarbrick,
Devolt Stotlemeyer,
William Creager,
Martin Jenkins,
Martin L. Manely,
R. Gregory,
G. W. Bennett,
John T. Woolverton,
J. R. Smith,
H. T. Smith,
J. J. Bowles,
J. Snively,
A. C. Blackman,
Mrs. Rachel Dalhy.
Mrs. Maria Colbert.
Hannah Colbert.
Harriet E. Colbert.
Hannah F. Colbert.
Mrs. Mary Reeder.
Mrs. Isabella Creager.

Alex. B. Reeder,
John P. Fonell,
Richard Bryan,
Charles H. Sutton,
Henry Johnston,
Benjamin Mitchell,
John Brosius,
Wm. W. Jenkins,
Joseph Graves,
J. J. Thomas,
T. B. Letto,
Solomon Jenkins,

*Vestry-
men.*

Mrs. C. Graves.
Mary J. Brosius.
Mary M. Brosius.
Matilda Bootman.
Helen M. Jenkins.
Mrs. E. Swabrick.
Mrs. E. Trimble.

Miss Susan Creager.	Ellen Mitchell.
Miss Almira Sheppard.	Susan Stillwell.
Mrs. Hellen Rowland.	M. A. McKinley.
Mrs. Beard.	Mrs. S. Jenkins.
Mrs. Eliza Hixon.	Mrs. L. Bowers.
Rose Bowles.	Sue A. Bowers.
Mrs. Lou Gregory.	Mary V. Bowers.
Dora A. Snively.	Lizzie Bowers.
Virginia C. Snively.	Mrs. Ann Barnett.
Mary E. Thomas.	Mrs. E. Kaneer.
L. M. Thomas.	Lizzie Stotlemeyer.
Bamaer Graves.	Ella Gregory.
Mrs. L. Graves.	Harriet F. Woolverton.

United States War Department, General Banks's division, third brigade, Brigadier General A. S. Williams commanding at Hancock, Maryland, to vestry of Saint Thomas's Church, Hancock, Dr.

To estimated damage done Saint Thomas's Church and rectory by concussion of a cannon placed in rear of the church, and by quartering of troops in it and in the rectory—companies of 110th, 84th, and 46th regiments Pennsylvania volunteers, and companies of 19th New York volunteers :

ITEMS.

To estimated cost of rebuilding north wall of church and bracing it to vestry room, replastering the latter and roofing it.....	\$300 00
To estimated cost of supporting ceiling with braces and rods, scaffolding and replastering of ceiling and church walls.....	300 00
To estimated cost of building wall for support of gallery from foundation, plastering lecture room ceiling and bracing front wall.....	300 00
To estimated cost of supporting cupola from gallery with pillars.....	100 00
To repair of nine gothic and two circular windows and two venetian blinds, glazing and painting thereof, \$150; to repair of lecture room and vestry windows, \$15.....	165 00
To repair of communion table in church, benches and desk in lecture room, painting of church and lecture room and repair of seats.....	150 00
To repair of door and closet locks, doors broken, benches in school room, chairs and prayer books destroyed....	30 00
To repair of six large and two small lamps damaged, at \$3 each; flues broken, \$3 50.....	27 50
To three tons coal (lump) at \$4, and one ton (soft) at \$3, burned; oil burned, \$1.....	16 00
To 115 panels board fence, (destroyed,) at \$2 per panel.	230 00

To two panels picket-fence and foundation wall.....	\$10 00
To destruction of one mahogany and one balm of Gilead shade trees in front of church.....	50 00
To rent for occupation of church, vestry, and lecture rooms eight weeks.....	30 00
To cleaning and whitewashing of church, vestry, and lecture rooms, and repair of grave lots.....	50 00
To 100 yards of church carpet destroyed, at 75 cents; 14 yards vestry room carpet destroyed, at 60 cents.....	84 40
To 100 feet tin pipe, (spouting,) lying on gallery, de- stroyed, at 25 cents per foot.....	25 00
Damages done by above-named causes.....	1,871 90

Further damages perpetrated by companies I and band of 28th regiment, New York volunteers, Colonel Donnelly commanding, not estimated above; received after above companies withdrew from the premises.

ITEMS.

To estimated cost of three sets large venetian blinds, (burned,) \$20 each; repair of five ditto damaged, \$5..	\$65 00
To estimated cost of furnace, range, and registers (broken)	15 00
To estimated cost of table in vestry room, (burned,) \$2 50; stove in vestry room damaged, \$3.....	5 50
To estimated cost of front steps to church (damaged)....	3 00
To estimated cost of pews damaged and destroyed in church.....	18 00
To estimated cost of bookcase and Sunday school library (destroyed).....	12 00
To estimated cost of wardrobe (damaged) \$2, and painting of vestry room, \$15.....	17 00
Amount of damages from 28th New York regiment	135 50

Damages to rectory from use as brigade hospital for eruptive diseases, and by quartering troops therein in January and February, 1862, General Williams's 3d brigade.

To cost of 26 panels picket-fence, at \$3, (burned).....	\$78 00
To cost of corn-crib, pen, and coop, (burned).....	30 00
To fruit trees destroyed, windlass and well bucket, (destroyed).....	10 00
To cellar door, steps, and benches destroyed,.....	5 00
To door locks, (broken,) painting, plastering, whitewash- ing, and scrubbing,	29 00
Total.....	153 00

RECAPITULATION.

Damages to church by cannon and troops	\$1,871 90
Damages to church by 28th regiment New York volunteers.	135 50
Damages to rectory	153 00
	2,160 40

HANCOCK, WASHINGTON Co., MD.,
March 26, A. D. 1862.

Personally appeared before me, John P. Woolverton, justice of the peace in and for said county, David J. Lee, rector; Benjamin Mitchell and Solomon Jenkins, for vestry of St. Thomas's Church, and made oath that the foregoing is, to the best of their knowledge and belief, a just and fair estimate of damages received to the above-named property by the hands of the troops quartered in Hancock during the occupancy of the post by Brigadier Generals Lander and Williams, and that they have received no part of the payment thereof.

JOHN P. WOOLVERTON, *J. P.*

DAVID J. LEE, *Rector.*

SOLOMON JENKINS, *Register.*

BENJAMIN MITCHELL.

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STATEMENT OF

WITNESSES

H. R. GAMBLE, GOVERNOR OF MICHIGAN

Read before the House of Representatives, at the
session of the House, at the City of Detroit, Michigan,
on the 10th day of January, 1888.

Attest, my hand and the seal of the House of Representatives,
this 10th day of January, 1888.

Sir: We have the honor to acknowledge the receipt of your
letter of the 10th inst., and in reply to inform you that
the same has been forwarded to the proper authorities
for their consideration.

Very respectfully,
H. R. GAMBLE, Governor of Michigan.

It is the policy of the State of Michigan to encourage
the growth of the State, and to protect the interests
of the people. The State of Michigan is a large
State, and it is the duty of the State to protect
the interests of the people. The State of Michigan
is a large State, and it is the duty of the State
to protect the interests of the people. The State of
Michigan is a large State, and it is the duty of
the State to protect the interests of the people.

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EMANCIPATION IN MISSOURI.

LETTER

FROM

H. R. GAMBLE, GOVERNOR OF MISSOURI,

TRANSMITTING

Resolutions of the convention of that State, responsive to the joint resolution of the House of Representatives passed April 10, 1862, in relation to co-operation with States desiring to emancipate their slaves.

JUNE 25, 1862.—Referred to the select committee on emancipation, and ordered to be printed.

ST. LOUIS, *June 21, 1862.*

SIR: By the direction of the convention of the State of Missouri, I have the honor to forward to you a copy of resolutions adopted by that body in response to a joint resolution of Congress upon the subject of emancipation.

I have the honor to be your obedient servant,

H. R. GAMBLE.

The honorable the SPEAKER
of the House of Representatives.

Whereas the Congress of the United States, upon the special recommendation of the President, has at its present session adopted a joint resolution in the following words, to wit:

“Resolved, That the United States ought to co-operate with any State which may adopt a gradual abolishment of slavery, giving to such State aid, to be used in its discretion, to compensate for the inconvenience, public and private, produced by such change of system.”

Be it therefore resolved, 1st. That in the opinion of this convention the proposition contained in the said joint resolution adopted by Congress and approved ———, A. D. 1862, is entitled, as well from its

eminent source as from its intrinsic importance, to deliberate and respectful consideration.

Resolved, 2d. That while a majority of this convention have not felt authorized to take action with respect to the grave and delicate questions of private right and public policy presented by said resolution, yet this body desires to recognize the liberality therein displayed by the government of the United States, and to express its profound appreciation thereof.

Resolved, 3d. That the governor be, and he is hereby, requested to transmit properly authenticated copies of the foregoing resolutions to the President of the United States and to the presiding officers of the Senate and the House of Representatives.

The above resolutions were adopted by the Missouri State convention on the 14th day of June, 1862.

AIKMAN WELCH,
Vice-President of Convention.

Attest: SAMUEL A. LOWE,
Secretary of Convention.

OFFICE OF SECRETARY OF STATE,
City of Jefferson, Missouri.

I, Mordecai Oliver, secretary of state, do hereby certify that the foregoing is a true and perfect copy of the preamble and resolutions the original of which are now on file in this office.

In testimony whereof I have hereunto set my hand and affixed the
[SEAL.] seal of office. Done at office this 18th day of June, A. D.
1862.

M. OLIVER, *Secretary of State.*

EXPENSES OF SELECT COMMITTEES.

LETTER

FROM

THE CLERK OF THE HOUSE OF REPRESENTATIVES,

IN ANSWER TO

Resolution of the House of the 9th instant, transmitting an account of the expenses of select committees appointed by the House.

JUNE 27, 1862.—Laid on the table, and ordered to be printed.

OFFICE OF THE HOUSE OF REPRESENTATIVES UNITED STATES,
Washington, June 12, 1862.

SIR: In answer to a resolution of the House of Representatives of the 9th instant, I herewith transmit copies of such accounts in my custody as are called for by said resolution.

In relation to that part of the resolution calling for a statement of any outstanding claims, I have to state that I have no knowledge of any, but presume that the Sergeant-at-Arms will report all such.

Very respectfully,

EM. ETHERIDGE,
Clerk House Representatives United States.

Hon. G. A. GROW,
Speaker of the House of Representatives.

Statement of the contingent and other expenses of select committees appointed by the House of Representatives.

EXPENSES OF SELECT COMMITTEES.

Voucher and sub-voucher.	To whom paid.	For what object.	Amount.	Total.
504	Edward Ball, Sergeant-at-Arms.	Expenses incurred by the investigating committee, of which Hon. C. H. Van Wyck is chairman— Amount paid sundry persons for stationery Do.... Hon. E. B. Washburne..... Do..... J. S. Jackson..... Do..... R. E. Fenton Do..... W. G. Steele..... Do..... H. L. Dawes Do..... W. S. Holman..... Do..... T. F. Andrews Do..... D. A. Stephens..... Do..... Hon. E. B. Washburne..... Do..... H. L. Dawes Do..... R. E. Fenton..... Do..... W. S. Holman Do..... W. G. Steele Do..... Edward Ball, Sergeant-at-Arms.....	\$43 00 270 60 245 00 176 00 46 00 75 60 212 00 58 00 20 00 120 00 63 55 146 00 175 20 70 70 590 75	\$2,312 40
S. V. 504	E. B. Washburne.....	Travel and other necessary expenses from my residence to New York..... Expenses at New York, 13 days, at \$3 per day	231 60 39 00	270 60
S. V. 504	J. S. Jackson	Approved, and Sergeant-at-Arms directed to pay the same. By order of the committee. W. S. HOLMAN, Acting Chairman. Amount expended in travel and other necessary expenses in attendance upon the select committee, of which Hon. C. H. Van Wyck is chairman..... Received the above amount of Edward Ball, Sergeant-at-Arms of the House of Representatives.	-----	245 00
S. V. 504	R. E. Fenton	Travel to and from Frewsburg to New York city, 460 miles each way (920)..... Travel to and from Washington on business for the committee, 240 miles each way (480).....	92 00 48 00	

S. V. 504	W. G. Steele.....	Twelve days expenses in attendance	36 00	176 00
		Approved, and Sergeant-at-Arms directed to pay the same. E. B. WASHBURN, <i>Acting Chairman</i> .		
		Sept. 6, 1861. Received payment of Edward Ball, Sergeant-at-Arms. R. E. FENTON.		
		Travelling and other expenses from Somerville, New Jersey, to New York, 50 miles each way (100 miles) Expenses at New York, 12 days	10 00 36 00	46 00
S. V. 504	H. L. Dawes.....	Approved, and Sergeant-at-Arms directed to pay the same. E. B. WASHBURN.		
		Sept. 6, 1861. Received the above amount from Edward Ball, Sergeant-at-Arms. W. G. STEELE.		
		Travelling and other necessary expenses from and to Adams, Massachusetts, to New York, 198 miles each way (396 miles)	39 60	
		Expenses in New York, 12 days	36 00	75 60
S. V. 504	W. S. Holman.....	Approved, and Sergeant-at-Arms directed to pay the same. E. B. WASHBURN, <i>Acting Chairman</i> .		
		Sept. 6, 1861. Received the above amount of E. Ball, Sergeant-at-Arms. H. L. DAWES		
		Travelling and other necessary expenses from Aurora, Indiana, to New York, by the way of Dunkirk, 880 miles each way, (1,760,) at 10 cents.....	176 00	
		Expenses at New York, 12 days	36 00	212 00
S. V. 504	Theo. F. Andrews, clerk	Approved, and Sergeant-at-Arms directed to pay the same. E. B. WASHBURN.		
		Sept. 7, 1861. Received the above from E. Ball, Sergeant-at-Arms of the House of Representatives. W. S. HOLMAN.		
		Travelling to and from Syracuse to New York, 584 miles.....	20 00	
		19 days in New York, at \$2.....	38 00	58 00
S. V. 504	D. A. Stephens.....	Sept. 7, 1861. Received the above from E. Ball, Sergeant-at-Arms of the House of Representatives. THEO. F. ANDREWS.		
		Sept. 25, 1861. Received of Edward Ball twenty dollars, on account of services as messenger for the committee of which Hon. C. H. Van Wyck is chairman. D. A. STEPHENS.....		
		Allowed. E. B. WASHBURN, <i>Chairman</i> , &c.		
			20 00	20 00

EXPENSES OF SELECT COMMITTEES.

Voucher and sub-voucher.	To whom paid.	For what object.	Amount.	Total.
S.V. 504	E. B. Washburne.....	New York city, Sept. 25, 1861. Received of Edward Ball, Sergeant-at-Arms of the House of Representatives, one hundred and twenty dollars, for necessary travelling and other expenses as connected with the committee of investigation, of which C. H. Van Wyck is chairman. E. B. WASHBURNÉ.....	.....	\$120 00
S.V. 504	H. L. Dawes.....	Sept. 1, 1861. Necessary expenses and charges from North Adams to New York, 200 miles	\$20 00	
		Necessary expenses and charges from New York to Boston on business of the committee, 234 miles.....	23 40	
		Expenses while in New York, 6½ days.....	20 15	63 55
S.V. 504	R. E. Fenton	Sept. 28, 1861. This account is allowed, and the Sergeant-at-Arms is directed to pay the same. By order of the committee. W. S. HOLMAN, Acting Ch'n. Received the above amount of sixty-three dollars and fifty-five cents of Edward Ball, Sergeant-at-Arms. H. L. DAWES. Expenses incurred in attendance on the congressional investigating committee— Expenses going to New York.....	15 00	
		Travel to Washington and return, and other expenses incurred as a member of the investigating committee of which Mr. Van Wyck is chairman, up to and including October 1, 1861	131 00	146 00
		Approved and allowed, and the Sergeant-at-Arms is directed to pay the same. E. B. WASHBURNÉ. Received the above amount from Edward Ball, Sergeant-at-Arms. R. E. FENTON.		
S.V. 504	W. S. Holman	Expenses incurred in going to New York to attend sitting of the committee Amount expended in attending on the sitting of the committee in New York ; expenses in going to Washington city on business of the committee ; expenses incurred while on that business ; and expenses incurred in going from thence to St. Louis, by order of the committee in connexion with its business.....	25 00	175 20

S. V. 504	W. G. Steele.....	Approved and allowed. Sept. 30, 1861. Received of Edward Ball, Sergeant-at-Arms, one hundred and seventy-five dollars and twenty cents, in full of the above account. Expenses from September 7 to October 1, 1861, including travelling expenses, hotel bills, &c..... Allowed and approved, and the Sergeant-at-Arms is directed to pay the same.	70 70
		W. S. HOLMAN.	
553	Edward Ball, Sergeant-at-Arms.	Oct. 1, 1861. Received the above bill from Hon. E. Ball, Sergeant-at-Arms.	730 60
S. V. 553	John F. Potter.....	Expenses of investigating committee of which Hon. John F. Potter is chairman. Oct. 9, 1861. Received of Edward Ball, Sergeant-at Arms of the House of Representatives, two hundred dollars for expenses on investigating committee of the House, from August 4 to October 9, 1861, inclusive..... Jno. F. POTTER, <i>Chairman of Committee.</i>	200 00
555	John Sherman	Expenses incurred by him as chairman of the committee authorized to examine and report as to the compensation of all officers of the government.....	244 00
562	Edward Ball, Sergeant-at-Arms.	Expenses on account of investigating committee of which Hon C. H. Van Wyck is chairman, from September 30 to October 11, 1861— Amount paid for witnesses summoned..... Do.... to members of the committee, and to stenographer, and to messenger, and for stationery..... Amount paid for summoning witnesses, and expenses.....	86 30 657 14 375 00
S. V. 562	D. A. Stephens.....	Services as messenger to special committee of which Hon. C. H. Van Wyck is ch'n. Approved, and Sergeant-at-Arms directed to pay the same. C. H. VAN WYCK, <i>Chairman.</i>	1,118 44 100 00
S. V. 562	T. F. Andrews	Oct. 5, 1861. Received of Edward Ball, Sergeant-at-Arms of the House of Representatives, the above amount. D. A. STEPHENS. Expenses incurred in attendance on the special committee of which Hon. C. H. Van Wyck is chairman, from September 11 to October 11, 1861, 29½ days, at \$2	59 00
		Stationery expense and charges..... Expenses to St. Louis, Missouri.....	4 00 40 00
		Allowed, and the Sergeant-at-Arms is directed to pay the same. C. H. VAN WYCK.	103 00
		Received payment of Edward Ball. THEO. F. ANDREWS.	

EXPENSES OF SELECT COMMITTEES.

Voucher and sub-voucher.	To whom paid.	For what object.	Amount.	Total.
S.V. 562	E. B. Washburne.....	Travelling and other necessary expenses as a member of the Van Wyck committee— 240 miles' travel to Washington from New York and back..... 296 miles' travel to New Bedford..... 1,054 miles' travel from New York to St. Louis..... Expenses in New York and New Bedford.....	\$48 00 59 20 105 40 26 00	\$238 60
S.V. 562	H. L. Dawes.....	Oct. 5, 1861. Received the above amount of Edward Ball, Sergeant-at-Arms of the House of Representatives. E. B. WASHBURN. Travelling and other necessary expenses from Boston to New Bedford, and returning to New York, and from New York to Washington, and from thence to St. Louis, on business for the investigating committee of which Hon. C. H. Van Wyck is chairman..... Oct. 9, 1861. Received the above \$184 30 of Edward Ball, Sergeant-at-Arms. H. L. DAWES.		184 30
585	J. P. Hale.....	Expenses of special committee to investigate the destruction of the Norfolk navy yard, &c— Nov. 14, 1861. Paid Hon. I. Toucey..... Do.....do.. John Fletcher..... Do.....do.. James H. Clements..... Do.....do.. J. W. Brownley..... Do.....do.. N. C. Dunham..... Do.....do.. A. Stedman..... Do.....do.. Miffin Pyle..... Jan. 13, 1862...do.. Daniel Hall (clerk)..... Do.....do.. Hon. J. W. Grimes..... Do.....do..... J. P. Hale.....	82 00 4 00 6 00 4 00 4 00 4 00 4 00 198 00 176 00 233 00	715 00
S.V. 585	J. W. Grimes.....	Services as member of the Senate committee to investigate the surrender of Norfolk navy yard, &c., from November 6 to November 27, 1861, inclusive,		

EXPENSES OF SELECT COMMITTEES.

S. V. 585	John P. Hale.....	22 days, at \$8 per day..... Jan. 13, 1862 Received payment. Approved. Services as member of Senate committee to investigate the surrender of Norfolk navy yard, &c., from November 6 to November 21, 1861, inclusive, 16 days, at \$8 per day..... Mileage 529 miles, at 10 cents.....	JAMES W. GRIMES. JOHN P. HALM.	176 00
609	Edward Ball, Sergeant-at-Arms.	Expenses of investigating committee of which Hon. C. H. Van Wyck is chairman, from October 11 to November 10, 1861, amount paid to witnesses..... Amount paid at St. Louis for telegraphing..... Do C. Blythe, St. Louis, for stationery..... Do J. J. Weitzig, messenger..... Do Barnum & Fogg, St. Louis, for rooms, fires, gas, &c..... Do Hon. W. S. Holman, for expenses, as per voucher No. 5..... Do T. F. Andrews..... Do Hon. E. B. Washburne..... Do for stationery..... Do Edward Ball, necessary travelling and other expenses attending the committee, and for fees and compensation for summoning witnesses before the committee at St. Louis, Cairo, and Chicago.....		233 80
S. V. 609	W. S. Holman.....	Travelling and other expenses while engaged on the business of the special committee of which Hon. C. H. Van Wyck is chairman, from October 3 to November 4, 1861, including travelling expenses from Chicago to Aurora, and also including cost of telegraphic despatches..... Approved, and Sergeant-at-Arms is requested to pay the same	E. B. WASHBURN.	1,215 55
S. V. 609	T. F. Andrews.....	November 4, 1861. Received of Edward Ball, Sergeant at-Arms, \$161 98, in full of the above account. Expenses at St. Louis from October 15 to 30..... Expenses on papers sent to Superintendent of Public Printing..... Stationery..... Expenses from St. Louis to Cairo..... Expenses at Cairo..... Expenses from Cairo to Chicago..... Expenses at Chicago..... Expenses from Chicago to Syracuse.....	W. S. HOLMAN.	161 98

Statement of the contingent and other expenses of select committees appointed by the House of Representatives.—Continued.

8

EXPENSES OF SELECT COMMITTEES.

Voucher and sub-voucher.	To whom paid.	For what object.	Amount.	Total.
S. V. 609	T. F. Andrews—Continued.....	2 reams foolscap paper, at \$4 50.....	\$9 00	\$103 42
		Approved, and Sergeant-at-Arms will pay the same. E. B. WASHBURN, Acting Chairman. November 5, 1861. Received of Edward Ball, Sergeant-at-Arms, the above sum.		
S. V. 609	E. B. Washburne.....	Travelling and other necessary expenses on the congressional investigating committee from October 13 to November 6, 1861..... Received the above amount of \$120 of Edward Ball, Sergeant-at-Arms. THEO F. ANDREWS. E. B. WASHBURN Travel from New York city to Mansfield, Ohio, 608 miles, and from Washington to Mansfield, Ohio, 663 miles, by order of the commissioners, 1,271 miles, at 10 cents.....		128 00
618	William B. Lord, secretary to commission on compensation and expenditures, act July 31, 1861.	Summoning 26 witnesses before the Judiciary Committee, and travel.....		127 10
653	Edward Ball, Sergeant-at-Arms.	Executing writ of attachment against Henry Wikoff, including costs.....	3 20	106 60
852	do.....do.....	Executing writ of commitment against Henry Wikoff, including costs.....	5 20	
		Executing writ of attachment against Benjamin Higdon, including costs.....	154 40	162 80
878	do.....do.....do.....	*\$150 on this item was returned and placed to the credit of the contingent fund of the House of Representatives in the United States treasury. "Expenses of investigating committees" appointed at 1st session 37th Congress: Amount paid S. W. Stacy..... Do Amos Read..... Do J. D. Wright..... Do D. A. Stephens..... Do D. A. Stephens, services as messenger..... Do Hewley & Brother..... Do D. R. Goodloe, clerk.....	20 00 164 00 201 00 150 00 198 19 1 20 80 00	

EXPENSES OF SELECT COMMITTEES.

9

879	-----do-----do-----	To St. Nicholas Hotel.....	15 50	
		Do D. R. Goodloe, clerk.....	84 00	
		Do T. F. Andrews, stenographer.....	1,500 00	
		Do American Telegraph Company.....	2 32	
		Do D. G. Morgan.....	9 05	
		Do D. McCormack.....	2 00	2,427 26
880	-----do-----do-----	Summoning 375 witnesses before the special committee of which Hon. John F. Potter is chairman, and travel.....		938 60
1188	-----do-----do-----	Summoning 58 witnesses before the special committee of which Hon. John F. Potter is chairman, and travel.....		134 20
		Serving writ of attachment on Aaron Higgins.....	2 00	
		Travel to New York, Boston, and Brooklyn to execute said writ and returning, 1,006 miles, at 10 cents.....	100 60	
		3 days' custody of prisoner.....	3 00	
		Release of prisoner.....	1 00	
		Expenses of prisoner, railroad fare, omnibus and hotel charges, &c.....	10 00	
1189	-----do-----do-----	Summoning 5 witnesses before the committee on expenditures on public buildings, and travel.....		116 60
				11 40

EXPENSES OF SELECT COMMITTEES.

LETTER

FROM THE

SERGEANT-AT-ARMS OF HOUSE OF REPRESENTATIVES,

IN ANSWER TO

Resolution of the House, transmitting an account of the expenses of investigating committees appointed by the House.

JUNE 27, 1862.—Laid on the table, and ordered to be printed.

OFFICE OF THE SERGEANT-AT-ARMS OF THE HOUSE OF REPRESENTATIVES,
Washington, June 25, 1862.

SIR: In compliance with a resolution adopted on the 9th, but which, in consequence of unavoidable absence from the city, I did not see until the 19th of the present month, I have the honor to submit the following statement for the information of the House of Representatives:

By the terms of the resolution I am directed to report "a statement of all claims and accounts presented to me by committees, or members of committees, charged with taking testimony during the present Congress, for their expenses while on such service, together with a statement of the amount I have paid thereon, to whom paid, for what precise purpose, at what rate per diem and per mile for services and travel, and by what authority. Also, whether any sums have been since refunded, and whether there are any, and if any, what amount of claims yet outstanding for such expenses."

In response to the foregoing resolution I have to state that I have not paid the expenses of any of the various committees of investigation, except that of which Mr. Potter was chairman, charged with the duty of inquiring into the loyalty of government employés, and that of which Mr. Van Wyck was chairman, whose duty it was to inquire into frauds connected with the government contracts, &c.

The expenses of these two committees I have paid, as they have from time to time been presented, if duly certified to be correct by the chairman, or such other member of the committee as for the time

being was discharging the duties of chairman of the one or the other committee.

The authority for making these payments was the order of the House itself, requiring me to attend upon the committees, either in person or by an assistant, and serve the necessary process for witnesses, and "pay all necessary expenses," &c.

I have at no time paid any claims for services rendered by any member of either committee, nor has any such demand been made upon me that I am aware of.

In regard to the expense account, each member kept his own memorandum of expenses. They could not well have been kept in any other way, because often one or more members of the committee, in order to facilitate their labors, were detailed to distant points on business connected with their investigations; and not unfrequently the committee divided and held sessions at different points at the same time, hence it was impossible that I could be present at all these different places at the same moment to pay the bills as they severally accrued. This difficulty induced the committee to adopt a uniform rule in making up their expense accounts, which was to charge \$3 per day for hotel and other personal expenses when located at any point pursuing their investigations, and ten cents per mile for travelling from place to place, which latter sum was to cover all expenses, including railroad or other fare, meals, &c. The \$3 per day was not allowed for the time occupied in travelling. The sum of three dollars was about the actual average sum per day paid for hotel bills, exclusive of washing bills and other incidental expenses which the committee were compelled to pay, and which were necessarily a charge upon the fund allowed for travelling expenses.

I did not hesitate to pay the expense accounts of members made up at these rates. Ten cents per mile has long been established by law as a fair rate for travelling expenses for persons in the service of the government. It is allowed to officers in the army and the navy when travelling, (over and above their regular salary.) It is, as I am informed, paid also to the agents of the treasury, and it is allowed by law to witnesses who come before the committees under the process of either house of Congress; and it appeared to me that where the committee should travel *to the witnesses* there was no rule of equity which would require them to travel in a less comfortable style than is allowed to witnesses if required to *go to the committees*. It may not perhaps be improper to state that before starting with the committee I inquired of some of the officials as to what was usually regarded as proper expenses to be paid for committees travelling on business of investigations under an order of the House, and it was suggested, in reply, that ten cents per mile was the usual rate allowed by government for travelling expenses, and would be a proper allowance.

The precise amount paid to each member of these committees I cannot now state with precision. Not anticipating that these expenditures would ever be called in question unless by the Committee on Accounts of the House of Representatives, or by the accounting offi-

cers of the treasury, I did not retain copies of vouchers used in settling my accounts. The originals, to an amount equal to what was paid me by the Clerk out of the contingent fund of the House, were deposited with the Clerk in the settlement of my account with him. For details and particulars to that extent I can only refer to his statement or to the treasury.

For that portion of the expenses of these committees paid out of the appropriation made at the present session, and which was drawn, not from the Clerk, but directly from the treasury, I still have the vouchers in my possession, a statement of which, in detail, will accompany this communication. In addition to the sums shown to be paid by that, and also by the statement furnished by the Clerk, I have paid to Daniel R. Goodloe, for services as clerk to Mr. Potter's committee, the sum of one hundred and fifty-two dollars.

No sums paid out by me to any member of either committee, or to any other person, has been refunded, so far as I am informed; nor am I able to state whether any claims for expenses or compensation (excepting what is due to myself for travelling with the committee and serving subpoenas) are still outstanding. Usually, I know of them only as they come to me audited and approved for payment by the chairman or acting chairman of committees. I have paid all that have been presented up to the present time.

Very respectfully, your obedient servant,

EDWARD BALL,

Sergeant-at-Arms House of Representatives.

Hon. G. A. GROW,

Speaker House of Representatives United States.

Statement of the amounts paid by me, in addition to the amount drawn from the Clerk of the House, (and for which vouchers were deposited with him,) for expenses incurred by the select committee of which Hon. Charles H. Van Wyck was chairman.

Date of payment.	No. of voucher.	For what paid.	Amount.	Total.
1861. Dec. —	1	Amount paid Hon. E. B. Washburne, travel and expenses, from November 8 to December 1, as per voucher.....	\$219 90	
		Amount paid for stationery, as per bill.....	9 75	
		Express charges on testimony and for telegraphing witness.....	11 37	
1862. Jan. —		Travel and expenses, as member of committee taking testimony at Boston in regard to shoes, as per resolution of the House of Representatives.....	126 20	
		Hack hire for committee.....	1 00	
				\$368 22
Feb. —	2	Amount paid Hon. E. B. Washburne, travel and expenses to Chicago and Indianapolis.....	40 00	
		Amount paid for telegraphing, as per bills.....	12 00	
				52 00
Mar. —	3	Amount paid Hon. E. B. Washburne, travel and expenses to Wilmington, (Delaware,) Philadelphia, New York, Cincinnati, Indianapolis, Chicago, Cairo, and St. Louis.....	342 90	
		Room rent, fires, and telegraphs for committee...	6 00	
		Amount paid Fuzer, stenographer.....	20 00	
		Amount paid Roberts, stenographer.....	20 00	
				388 90
April 3	5	Amount paid Hon. E. B. Washburne, expenses, return No. 5.....	30 00	
20	6	Amount paid Hon. E. B. Washburne, expenses, return No. 6.....	50 00	
May 6	7	Amount paid Hon. E. B. Washburne, expenses, return No. 7.....	18 00	
				98 00
1861. Dec. —	8	Amount paid Hon. H. L. Dawes, travel and expenses at St. Louis and Illinois, on investigating committee, as per voucher No. 8.....	158 70	
1862. Jan. —	9	Amount paid Hon. H. L. Dawes, expenses to Boston, as per voucher No. 9.....	58 60	
Mar. —	10	Amount paid Hon. H. L. Dawes, expenses to Boston, as per voucher No. 10.....	147 21	
April —	11	Amount paid Hon. H. L. Dawes, expenses to New York, as per voucher No. 11.....	70 60	
	12	Amount paid Hon. H. L. Dawes, expenses to Boston in January, as per voucher No. 12.....	126 60	
				561 71
1861. Dec. —	13	Amount paid Hon. W. S. Holman, expenses at New York, and travel to and from Washington, as per voucher No. 13.....	33 00	

Statement of expenses incurred by select committee, &c.—Continued.

Date of payment	No. of voucher.	For what paid.	Amount.	Total.
1862.				
Feb. —	14	Travel and expenses to, at, and from Cincinnati, as per voucher No. 14.....	\$168 00	
May —	15	Travel and expenses to, at, and from Harrisburg to New York and Philadelphia, as per voucher No. 15.....	77 00	
	15	Amount paid for two despatches from St. Louis, as per voucher No. 15.....	3 40	
	16	Amount paid Hon. W. S. Holman, as per voucher No. 16.....	20 00	
	17	Amount paid, travel and expenses, on investigating committee, as per voucher No. 17.....	174 20	
	17	Amount paid Fuzer, stenographer, as per voucher No. 17.....	60 00	\$475 60
	17	Amount paid witness fees, as per voucher No. 17..	9 00	
	17	Amount paid T. F. Andrews, stenographer, as per voucher No. 17.....	60 00	
				129 00
1861.				
Oct. —	18	Amount paid W. Hinks, as per voucher No. 18...	25 00	
Dec. 17	19	Amount paid Theo. F. Andrews, as per voucher No. 19.....	226 50	
1862.				
Feb. 5	20	Amount paid Theo. F. Andrews, as per voucher No. 20.....	67 22	
	11	Amount paid Theo. F. Andrews, as per voucher No. 21.....	87 65	
April 23	22	Amount paid Theo. F. Andrews, as per voucher No. 22.....	47 72	
	23	Amount paid Theo. F. Andrews, as per voucher No. 23.....	62 16	
	24	Amount paid Theo. F. Andrews, as per voucher No. 24.....	1,200 00	
May 23	25	Amount paid Theo. F. Andrews, as per voucher No. 25.....	225 00	
				1,941 25
Feb. —	26	Amount paid W. G. Steele, member of committee, travel and expenses to, at, and from Cincinnati, as per voucher No. 26.....	168 40	
April —	27	Amount paid W. G. Steele, travel and expenses to, at, and from New York, Philadelphia, Cincinnati, Indianapolis, Chicago, and Cairo, and personal expenses, as per voucher No. 27.....	314 90	
May —	28	Amount paid W. G. Steele, travel and expenses to, at, and from Harrisburg and New York, as per voucher No. 28.....	77 00	
	29	Amount paid N. G. Steele, travel and expenses to, at, and from St. Louis, New York, and Harrisburg and New York, in December, as per voucher No. 29.....	354 00	
				914 30

Statement of expenses incurred by select committee, &c.—Continued.

Date of payment.	No. of voucher.	For what paid.	Amount.	Total.
1861.				
Oct. —	30	Amount paid D. A. Stephens, as per voucher No. 30	\$20 00	
Nov. —	31	Amount paid D. A. Stephens, as per voucher No. 31	50 00	
1862.				
Mar. —	32	Amount paid C. F. Howe, as per voucher No. 32..	10 00	
				\$80 00
1861.				
Oct. —	33	Amount paid R. E. Fenton, travel and expenses in attending investigating committee, as per voucher No. 33.....	285 13	
1862.				
Feb. —	34	Amount paid R. E. Fenton, travel and expenses in attending investigating committee, as per voucher No. 34.....	75 00	
Mar. —	35	Amount paid R. E. Fenton, travel and expenses in attending investigating committee, as per voucher No. 35.....	79 90	
				440 03
	36	Amount paid sundry bills for stationery, telegraphs, &c., for committee, as per voucher No. 36.....		115 74
	37	Amount paid sundry witnesses, as per voucher No. 37.....		195 75
				5,760 50

CAUSE IN THE MILITARY DISTRICT AT PORT JEFFERSON
MICHIGAN

EXHIBIT
ASSISTANT SECRETARY OF WAR

The fact of the existence of the military district at Port Jefferson, Michigan, is a matter of public knowledge, and is not in dispute.

The fact of the existence of the military district at Port Jefferson, Michigan, is a matter of public knowledge, and is not in dispute. It would seem that certain persons, who have been in the military district at Port Jefferson, Michigan, have been engaged in the business of selling and distributing certain articles, which are prohibited by the laws of the United States. The Government has been informed of this, and has taken steps to suppress this business. It is the duty of the Government to suppress this business, and to prevent the sale and distribution of these articles. The Government has the right to do this, and it is its duty to do so.

Very respectfully,
C. W. WOODRUFF
Assistant Secretary of War

LANDS IN THE MILITARY RESERVE AT FORT LEAVEN-
WORTH.

LETTER

FROM THE

ASSISTANT SECRETARY OF WAR,

IN RELATION TO

*The issue of patents for lands included in the military reservation at
Fort Leavenworth.*

JULY 7, 1862.—Referred to the Committee on Private Land Claims and ordered to be
printed.

WAR DEPARTMENT,
Washington City, D. C., June 28, 1862.

SIR : The Secretary of War directs me to transmit to you the enclosed copies of papers just received by him from the quartermaster general.

It would seem that certain persons not known to the department have, by some means also unknown to it, procured the issue of patents for lands included in the military reserve at Fort Leavenworth, under which an attempt is about to be made to wrest that reserve, or a part of it, from the government, though it still has great need for the same.

The department has no information upon the subject other than that gathered from the papers enclosed, but the Secretary has deemed it his duty to call your attention to the matter, in order that the committee on contracts, &c., &c., of which you are chairman, may investigate it, and defeat the apparent fraud now sought to be practiced against the government.

Very respectfully, your obedient servant,

C. P. WOLCOTT,
Assistant Secretary of War.

Hon. E. B. WASHBURNE,
Chairman of Committee on Contracts, &c., House of Representatives.

WASHINGTON, D. C., *June 28, 1862.*

GENERAL: I have the honor to acknowledge the receipt of your letter of the 27th instant, and to state in reply that the designs of certain parties now living in Kansas upon the public lands at Fort Leavenworth were not officially presented to me as the commanding officer of that post; but the day previous to my being relieved from duty there, and my departure for Washington city, the memorandum, exhibiting numbers of the sections for which it was asserted patents had been secured to predicate claims for said lands, was handed to me by Major L. E. Easton, depot quartermaster at Fort Leavenworth, the same having come into his possession (I think) that day, and which I informed him I would submit to you upon my arrival in this city, with such verbal explanations as was justified by the general impression then entertained at Fort Leavenworth upon this subject. That efforts are being made to wrest from the government under the cover of legal decisions the land of this reserve there is not a doubt, and without having any more evidence than the memorandum submitted to sustain my assertion, I felt it my duty, in which the honorable Secretary of War appears to concur, to report to your department my impressions, which I deplore are not more fully sustained by proof.

Very respectfully, your obedient servant,

W. E. PRINCE,
Major 3d Infantry.

General M. C. MEIGS,

Quartermaster General U. S. A., Washington City, D. C.

DEPOT QUARTERMASTER'S OFFICE,
Fort Leavenworth, Kansas, 1862.

	Acres.
S. W. $\frac{1}{4}$ of N. W. $\frac{1}{4}$, section 23.....	40
S. W. $\frac{1}{4}$ of section 23.....	160
S. E. $\frac{1}{4}$ of N. E. $\frac{1}{4}$, section 22.....	40
E. $\frac{1}{2}$ of S. E. $\frac{1}{4}$ and S. W. $\frac{1}{4}$ of S. E. $\frac{1}{4}$, section 22.....	120
Lots 4, 5, 6, and 7, section 26.....	183 $\frac{73}{100}$
Lots 3 and 4, section 27.....	103 $\frac{47}{100}$

647 $\frac{20}{100}$

Township 8, range 22, conveyed to John Connor, by patent dated January 3, 1862.

	Acres.
S. E. $\frac{1}{4}$, section 23.....	160
Lots 3 and 4, section 24.....	106 $\frac{80}{100}$
Lot 4, section 25.....	62 $\frac{00}{100}$
	329 $\frac{20}{100}$

Township 8, range 22 east, patented to Henry Tiblow, January 3, 1862.

	Acres.
N. E. $\frac{1}{4}$, section 23	160
E. $\frac{1}{2}$ of N. W. $\frac{1}{4}$ and N. W. $\frac{1}{4}$ of section 23	120
Lot 2 of section 24	52
	332

Township 8, range 22 east, patented to Ne-con-he-con.

[Indorsement.]

Received from Major Easton, by the hands of Major W. E. Prince, 3d infantry, at Quartermaster General's Office, June 27, 1862.—(See letter to Major Prince, of that date.) These lots are said to be a part of the military reserve at Fort Leavenworth, to have been patented to three Delaware Indians, and transferred to a railroad company, which is a branch of the Pacific railroad. That Majors Prince and Easton are of opinion that within a year the government will be obliged to purchase these very buildings at Fort Leavenworth. That the ejection of the United States from the military reserve is openly predicted there.

This reserve, or a part of it, was offered for sale in the time of Secretary Floyd, and the sale is reported to have been prevented with difficulty. It is said that as much as \$200 per acre has been offered for parts of the tract.

I showed this paper to the Secretary, who directed Major Prince to be called upon to make an official report, which was done by my letter of this date.

M. C. MEIGS,
Quartermaster General.

Published by the American Medical Association, 535 North Dearborn Street, Chicago, Ill.
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APPROPRIATIONS, NEW OFFICERS, &c.

STATEMENTS

SHOWING

- I. APPROPRIATIONS MADE DURING THE SECOND SESSION OF THE THIRTY-SEVENTH CONGRESS.
- II. OFFICERS CREATED AND THE SALARIES THEREOF.
- III. THE OFFICES THE SALARIES OF WHICH HAVE BEEN INCREASED, WITH THE AMOUNT OF SUCH INCREASE DURING THE SAME PERIOD.

AUGUST 21, 1861.

PREPARED UNDER THE DIRECTION OF THE SECRETARY OF THE SENATE AND CLERK OF THE HOUSE OF REPRESENTATIVES, IN COMPLIANCE WITH THE SIXTH SECTION OF THE "ACT TO AUTHORIZE THE APPOINTMENT OF ADDITIONAL PAYMASTERS, AND FOR OTHER PURPOSES," APPROVED JULY 4, 1836.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1862.

STATEMENT.

Object of appropriation.	Amount.	Total.
I. APPROPRIATIONS MADE DURING THE SECOND SESSION OF THE THIRTY-SEVENTH CONGRESS.		
<i>By the act to further promote the efficiency of the navy.</i>		
To enable the Secretary of the Navy to cause two hundred "medals of honor" to be prepared, with suitable emblematic devices, which shall be bestowed upon such petty officers, seamen, landsmen, and marines, as shall most distinguish themselves by their gallantry in action and other seamanlike qualities during the present war.....	-----	\$1,000 00
<i>By the act making an appropriation for gunboats on the western rivers.</i>		
For gunboats on the western rivers.....	-----	1,000,000 00
<i>By the act making appropriations for the payment of invalid and other pensions of the United States for the year ending the thirtieth of June, eighteen hundred and sixty-three.</i>		
For invalid pensions under various acts.....		
For pensions under acts of eighteenth March, eighteen hundred and eighteen; fifteenth May, eighteen hundred and twenty-eight; and seventh June, eighteen hundred and thirty-two.....	\$640,000 00	
For pensions to widows of those who served in the revolutionary war, under the third section of the act of fourth July, eighteen hundred and thirty-six; the acts of seventh July, eighteen hundred and thirty-eight; third March, eighteen hundred and forty-three; seventeenth June, eighteen hundred and forty-four; second February and twenty-ninth July, eighteen hundred and forty-eight; and second section of act of third February, eighteen hundred and fifty-three.....	25,000 00	
For pensions to widows and orphans, under first section act fourth July, eighteen hundred and thirty-six; act of twenty-first July, eighteen hundred and forty-eight; first section act of third February, eighteen hundred and fifty-three; and act third June, eighteen hundred and fifty-eight.....	200,000 00	
For navy invalid pensions.....	340,000 00	
For navy pensions to widows and orphans, under act of eleventh August, eighteen hundred and forty-eight.....	45,000 00	
For privateer invalid pensions.....	200,000 00	
	600 00	
	-----	1,450,600 00

APPROPRIATIONS, NEW OFFICERS, ETC.

<i>By the act to provide for the protection of overland emigrants to California, Oregon, and Washington Territory.</i>			
For the protection of emigrants on the overland routes between the Atlantic States and California, Oregon, and Washington Territory -----			25,000 00
<i>By the act to pay the expenses of the special committee of the House of Representatives, appointed July eighth, eighteen hundred and sixty-one, to ascertain and report in regard to contracts with any department of the government for provisions, supplies, transportation, &c.</i>			
To pay the expenses of the special committee of the House of Representatives, appointed on the eighth day of July, eighteen hundred and sixty-one, to ascertain and report in regard to contracts made with any department of the government for provisions, supplies, transportation, &c -----			10,000 00
<i>By the act making appropriations for the consular and diplomatic expenses of the government for the year ending thirtieth June, eighteen hundred and sixty-three; and additional appropriations for the year ending thirtieth June, eighteen hundred and sixty-two.</i>			
For salaries of envoys extraordinary, ministers, and commissioners of the United States at Great Britain, France, Russia, Prussia, Spain, Austria, Brazil, Mexico, China, Italy, Chili, Peru, Portugal, Switzerland, Rome, Belgium, Holland, Denmark, Sweden, Turkey, New Granada, Bolivia, Ecuador, Venezuela, Guatemala, Nicaragua, Sandwich Islands, Costa Rica, Honduras, Argentine Confederation, Paraguay, and Japan -----	301,000 00		
For salaries of secretaries of legation -----	43,350 00		
For salaries of assistant secretaries of legation at London and Paris -----	3,000 00		
For salary of the interpreter to the legation to China -----	5,000 00		
For salary of the secretary of legation to Turkey, acting as interpreter -----	3,000 00		
For salary of the interpreter to the legation of Japan -----	2,500 00		
For compensation to an interpreter to the consulate at Kanagawa -----	1,500 00		
For contingent expenses of all the missions abroad -----	50,000 00		
For contingent expenses of foreign intercourse -----	100,000 00		
For expenses of intercourse with the Barbary powers -----	3,000 00		
For expenses of the consulates in the Turkish dominions, namely, interpreters, guards, and other expenses of the consulates at Constantinople, Smyrna, Candia, Alexandria, and Beirut -----	2,500 00		
For the relief and protection of American seamen in foreign countries -----	200,000 00		
For expenses which may be incurred in acknowledging the services of the masters and crews of foreign vessels in rescuing citizens of the United States from shipwreck -----	7,500 00		
For the purchase of blank books, stationery, arms of the United States, seals, presses, flags, postages, and for the payment of miscellaneous expenses of the consuls of the United States, including the preservation of the archives of the consulates -----	45,000 00		
Amount carried forward -----	767,350 00		2,486,600 00

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
For office rent for those consuls general, consuls and commercial agents, who are not allowed to trade, including loss by exchange thereon -----	\$767,350 00	\$2,486,600 00
For salaries of consuls general at Quebec, Calcutta, Alexandria, Constantinople, Havana, Frankfort-on-the-Main; consuls at Kanagawa and Nagasaki, in Japan, Liverpool, London, Melbourne, Hong Kong, Glasgow, Mauritius, Singapore, Belfast, Cork, Dundee, Demarara, Halifax, Kingston, (Jamaica,) Leeds, Manchester, Nassau, (New Providence,) Southampton, Turk's Island, Prince Edward's Island, Havre, Paris, Marseilles, Bordeaux, La Rochelle, Lyons, Moscow, Odessa, Revel, St. Petersburg, Matanzas, Trinidad de Cuba, Santiago de Cuba, San Juan, (Porto Rico,) Cadiz, Malaga, Ponce, (Porto Rico,) Trieste, Vienna, Aix-la-Chapelle, Canton, Shanghai, Fouchou, Amoy, Ningpo, Beirut, Smyrna, Jerusalem, Rotterdam, Amsterdam, Antwerp, Funchal, Oporto, Saint Thomas, Elsinour, Genoa, Basle, Geneva, Messina, Naples, Palermo, Leipsic, Munich, Leghorn, Stuttgart, Bremen, Hamburg, Tangiers, Tripoli, Tunis, Rio de Janeiro, Pernambuco, Vera Cruz, Acapulco, Callao, Valparaiso, Buenos Ayres, San Juan del Sur, Aspinwall, Panama, Laguayra, Honolulu, Lahaina, Cape Town, Falkland Island, Venice, Stettin, Candia, Cypress, Batavia, Fayal, Santiago, (Cape de Verdes,) Saint Croix, Spezzia, Athens, Zangibar, Bahia, Maranham Island, Para, Rio Grande, Matamoras, Mexico, (city,) Tampico, Paso del Norte, Tabasco, Paiza, Tumbez, Talcahuano, Carthagena, Sabanillo, Omoa, Guayaquil, Cobija, Montevideo, Tahiti, Bay of Islands, Apia, Lanthala, Bristol, Cardiff, Malta, St. John, (Newfoundland,) St. John, (New Brunswick,) Picton, (Nova Scotia,) La Union, Barbadoes, Bermuda, Antigua, Nantes, Napoleon, Vendee, Nice, Lisbon, Gottenburg, Tehuantepec, Santos, St. Catherine, Balize, Gaspe Basin, Valencia, Port Mahon, Martinique, Taranto, Santander, Galatz, Bilbao, Scio, Paramaribo, Macao, Stockholm, Ancona, Otranto, Swatow, La Paz, Bergen, Trinidad, Barcelona, Quebec, Maracaibo, Algiers, Port-au-Prince, San Domingo, (city,) Monrovia, Cape Haytien, Aux Cayes, and New Castle-upon-Tyne; commercial agents at San Juan del Norte, St. Paul de Loanda, (Angola,) Gaboon, St. Marc, Curaçoa, and Amoor river -----	351,550 00 4,500 00 7,000 00 9,000 00 54,111 97	
For interpreters to the consulates in China -----		
For salaries of the marshals for the consular courts in Japan, China, Siam, and Turkey -----		
For rent of prisons for American convicts in Japan, China, Siam, and Turkey, and for wages of keepers of the same.		
For compensation and increased salaries to sundry consuls under the act of second August, 1861.-----		
To meet an extraordinary emergency which has arisen in bringing from S. Iney, New South Wales, eight seamen belonging to the ship "Junior," charged with the crimes of mutiny and murder, a guard of seven men, and also eleven of the crew as witnesses -----	15,007 92	
		1,235,889 89

By the act making appropriations for the support of the Military Academy for the year ending the thirtieth of June, eighteen hundred and sixty-three.

For pay of officers, instructors, cadets, and musicians	100,000 00
For commutation of subsistence	4,161 00
For forage for officers' horses	1,440 00
For pay in lieu of clothing to officers' servants	60 00
For current and ordinary expenses, as follows: repairs and improvements, fuel and apparatus, forage, postage, stationery, transportation, printing, clerks, miscellaneous and incidental expenses, and departments of instruction	35,000 00
For gradual increase and expense of library	1,000 00
For expenses of the board of visitors	1,500 00
For forage of artillery and cavalry horses	5,000 00
For supplying horses for artillery and cavalry practice	1,000 00
For repairs of officers' quarters	1,500 00
For targets and batteries for artillery exercise	150 00
For furniture for hospitals for cadets	100 00
For annual repairs of gas pipes and retorts	300 00
For warming apparatus for academic and other buildings	3,000 00
For kitchen of cadets' mess hall	1,000 00
For latrines at cadets' camp ground	1,000 00

156,211 00

By the act making an appropriation for the purchase of cotton and tobacco seed for general distribution.

For the purchase of cotton seed	3,000 00
For the purchase of tobacco seed	1,000 00

4,000 00

By the act to authorize the construction of twenty iron clad steam gunboats.

For the construction, by contract or otherwise, twenty iron clad steam gunboats, for the use of the navy of the United States	10,000,000 00
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10,000,000 00

By the act making an appropriation for completing the defences of Washington, and for other purposes.

For completing the defences of Washington	150,000 00
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150,000 00

Amount carried forward	14,032,700 89
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14,032,700 89

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	-----	\$14,032,700 89
By the act making appropriations for the construction, preservation, and repairs of certain fortifications and other works of defence, for the year ending thirtieth of June, eighteen hundred and sixty-three, and additional appropriations for the year ending thirtieth June, eighteen hundred and sixty-two.		
For Fort Montgomery, at outlet of Lake Champlain, New York.....	\$100,000 00	
For Fort Knox, at narrows of Penobscot river, Maine	100,000 00	
For fort on Hog Island ledge, Portland harbor, Maine	100,000 00	
For continuation of works at Fort Scammel, Portland harbor, Maine	75,000 00	
For Fort Warren, Boston harbor, Massachusetts	75,000 00	
For Fort Winthrop, Boston harbor, Massachusetts	50,000 00	
For fort at New Bedford harbor, Massachusetts	100,000 00	
For fort at Willet's Point, opposite Fort Schuyler, New York.....	200,000 00	
For fort on site of Fort Tompkins, Staten Island, New York.....	200,000 00	
For fort at Sandy Hook, New Jersey.....	300,000 00	
For Fort Delaware, Delaware river.....	60,000 00	
For Fort Carroll, Baltimore harbor, Maryland.....	200,000 00	
For Fort Calhoun, Hampton Roads, Virginia	200,000 00	
For Fort Taylor, Key West, Florida.....	200,000 00	
For Fort Jefferson, Garden Key, Florida.....	200,000 00	
For fort at Fort Point, San Francisco bay, California	200,000 00	
For fort at Alcatraz Island, San Francisco bay, California.....	150,000 00	
For contingencies of fortifications, including field works	500,000 00	
For bridge trains and equipage for armies in the field.....	250,000 00	
For tool and seige trains for armies in the field	250,000 00	
For fortifications on the northern frontier, including fortifications at Ogdensburg, Oswego, at the mouth of Genessee river, Niagara, Buffalo, Detroit, Fort Gratiot, Mackinaw, and the Sault Ste Marie	750,000 00	
For Fort Montgomery, at outlet of Lake Champlain, New York.....	50,000 00	
For Fort Knox, Penobscot river, Maine.....	50,000 00	
For fort on Hog Island ledge, Portland harbor, Maine	50,000 00	
For Fort Winthrop and exterior batteries, Boston harbor, Massachusetts	50,000 00	

APPROPRIATIONS, NEW OFFICERS, ETC.

For fort at New Bedford harbor, Massachusetts	50,000 00
For Fort Adams, Newport harbor, Rhode Island	50,000 00
For Fort Schuyler, East river, New York	25,000 00
For fort at Willet's Point, opposite Fort Schuyler, New York	50,000 00
For Fort Richmond, Staten Island, New York	25,000 00
For fort on site of Fort Tompkins, Staten Island, New York	50,000 00
For commencement of casemate at battery on Staten Island, New York	100,000 00
For new battery at Fort Hamilton, at the Narrows, New York	100,000 00
For Fort Mifflin, near Philadelphia, Pennsylvania	25,000 00
For new fort opposite Fort Delaware, on Delaware shore	200,000 00
For Fort Monroe, Hampton Roads, Virginia	50,000 00
For Fort Taylor, Key West, Florida	100,000 00
For Fort Jefferson, Garden Key, Florida	100,000 00
For additional fort at the Tortugas, Florida	200,000 00
For fort at Ship Island, coast of Mississippi	100,000 00
For contingencies of fortifications	100,000 00
For bridge trains and equipage	250,000 00
For defence in Oregon and Washington Territory, at or near the mouth of Columbia river	100,000 00
For the erection of temporary works in Maine and in the harbor at Portsmouth, New Hampshire	550,000 00
For the erection of temporary works in Narragansett bay	200,000 00
	\$6,885,000 00
<i>By the act making an appropriation to illuminate the public buildings.</i>	
To enable the Commissioner of Public Buildings to carry out the order of Congress for the illumination of the public buildings on the twenty-second of February, eighteen hundred and sixty-two	1,000 00
<i>By the act making appropriations for the signal service of the United States army.</i>	
For the manufacture or purchase of signal equipments and signal stores, to equip and supply the forces now in the field	20,000 00
For contingent expenses of the signal department	1,000 00
For the manufacture or purchase of signal equipments and signal stores, for countersign signals, to prevent the collision of friendly regiments	34,950 00
	55,950 00
<i>By the act making additional appropriations for the support of the army for the year ending June 30, 1862.</i>	
For pay of two and three years' volunteers	50,000,000 00
	50,000,000 00
	20,974,650 89

STATEMENT—Continued.

APPROPRIATIONS, NEW OFFICERS, ETC.

Object of appropriation.	Amount.	Total.
For payments to discharged soldiers for clothing not drawn -----	\$50,000,000 00	\$20,974,650 89
For subsistence in kind for two and three years' volunteers -----	50,000 00	
For transportation of the army and its supplies -----	26,668,902 00	
For the purchase of cavalry and artillery horses -----	14,881,000 00	
For clothing, camp and garrison equipage -----	1,661,040 00	
For regular supplies, incidental expenses, transportation, barracks and quarters, clothing, camp and garrison equipage, keeping, transporting, and supplying prisoners, and other supplies and services of the quartermaster's department, to the thirtieth June, eighteen hundred and sixty-two, and to be divided among the said several heads of appropriation herein named, as the exigencies of the service may require -----	12,173,546 77	
For the armament of fortifications -----	76,500,000 00	
For the current expenses of the ordnance service -----	834,000 00	
For ordnance, ordnance stores and supplies, including horse equipments for all the mounted troops -----	200,000 00	
For purchase of arms for volunteers and regulars, and ordnance and ordnance stores -----	1,924,000 00	
For the medical and hospital department -----	7,500,000 00	
For amount required to refund to the States expenses incurred on account of volunteers called into the field -----	1,000,000 00	
	15,000,000 00	
		208,392,488 77
<i>By the act to authorize the issue of United States notes and for the redemption or funding thereof, and for funding the floating debt of the United States.</i>		
To enable the Secretary of the Treasury to carry this act into effect -----		300,000 00
<i>By the act making appropriations for sundry civil expenses of the government for the year ending the thirtieth of June, eighteen hundred and sixty-three, and additional appropriations for the year ending the thirtieth of June, eighteen hundred and sixty-two.</i>		
<i>Survey of the coast.</i> —For the survey of the Atlantic and Gulf coasts of the United States, (including compensation of civilians engaged in the work, and excluding pay and emoluments of officers of the army and navy, and petty officers and men of the navy employed on the work) -----	178,000 00	
For continuing the survey of the western coast of the United States, (including compensation of civilians engaged in the work) -----	100,000 00	

For continuing the survey of the Florida reefs and keys, (including compensation of civilians engaged in the work, and excluding pay and emoluments of officers of the army and navy, and petty officers and men of the navy employed on the work) -----	11,000 00	
For publishing the observations made in the progress of the survey of the coast of the United States, (including compensation of civilians employed in the work) -----	5,000 00	
For repairs of steamers and surveying schooners used in the coast survey -----	5,000 00	
To supply deficiency in the fund for the relief of sick and disabled seamen -----	200,000 00	
For the discharge of such miscellaneous claims, not otherwise provided for, as shall be admitted in due course of settlement at the treasury -----	5,000 00	
<i>Light-house establishment.</i> —For the Atlantic, Gulf, and Lake coasts, viz : -----		
For supplying the light-houses and beacon lights with oil, glass chimneys, wicks, and other necessary expenses of the same, repairing and keeping in repair the lighting apparatus -----	154,698 80	
For repairs and incidental expenses, refitting, and improving all the light-houses and buildings connected therewith -----	102,200 00	
For salaries of five hundred and ninety-six keepers of light-houses and light beacons and their assistants -----	213,193 33	
For salaries of forty-three keepers of light-vessels -----	23,900 00	
For seamen's wages, repairs, supplies, and incidental expenses of forty-five light-vessels -----	170,967 70	
For expenses of raising, cleaning, painting, repairing, remooring, and supplying losses of beacons and buoys, and for chains and sinkers for the same -----	112,350 00	
For expenses of visiting and inspecting lights and other aids to navigation -----	2,000 00	
<i>For the coasts of California, Oregon, and Washington.</i> —For supplying nineteen light-houses and beacon lights with oil, glass chimneys, charmois skins, polishing powder, and other cleaning materials, transportation, expenses of keeping lamps and machinery in repair, publishing notices to mariners of changes of aids to navigation -----	17,270 00	
For repairs and incidental expenses of nineteen light-houses and buildings connected therewith -----	10,000 00	
For salaries of forty-three keepers and assistant keepers of light-houses at an average not exceeding eight hundred dollars per annum -----	25,800 00	
For expenses of raising, cleaning, painting, repairing, remooring, and supplying losses of floating buoys and beacons, and for chains and sinkers for the same, and for coloring and numbering all the buoys -----	10,000 00	
For maintenance of all the vessels provided for by the act of eighteenth August, eighteen hundred and fifty-six, for transportation of supplies and materials, and for repairs of light-houses and buoys service, and for inspecting purposes -----	30,000 00	
For commutation of fuel and quarters for officers of the army serving on light-house duty the payment of which is no longer provided for by the quartermaster's department -----	5,239 79	
For compensation of two inspectors of customs acting as superintendents for the life-saving stations on the coasts of Long Island and New Jersey -----	3,000 00	
For compensation of fifty-four keepers of stations, at two hundred dollars each -----	10,800 00	
For contingent expenses of the life-saving stations on the coasts of Long Island and New Jersey -----	20,000 00	
Amount carried forward -----	1,415,419 62	229,667,139 66

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$1,415,419 62	\$229,667,139 66
For hire of carts on the public grounds.....		
For purchase and repair of tools used in the public grounds.....	1,095 00	
For purchase of trees and tree boxes, to replace, where necessary, such as have been planted by the United States, to whitewash tree boxes and fences, and to repair pavements in front of the public grounds.....	200 00	
For annual repairs of the Capitol, water closets, public stables, water pipes, pavements, and other walks within the Capitol square, broken glass, and locks, and for the protection of the building, and keeping the main approaches to it unencumbered.....	3,000 00	
For annual repairs of the President's House and furniture, improvement of grounds, purchase of plants for garden, and contingent expenses incidental thereto.....	6,000 00	
For fuel, in part, of the President's House.....	5,000 00	
For lighting the Capitol and President's House, the public grounds around them, and around the executive offices, and Pennsylvania avenue, Bridge and High streets, in Georgetown, Four-and-a half street, Seventh and Twelfth streets, across the mall.....	2,400 00	
For additional fixtures and lighting and repairing the building and footways of the custom-house and post office in Georgetown, in the District of Columbia.....	50,000 00	
For purchase of books for library at the Executive Mansion, to be expended under the direction of the President of the United States.....	250 00	
For repairs of the Potomac, Navy Yard, and upper bridges, and the roads appurtenant thereto.....	250 00	
For repairs of Pennsylvania avenue and watering the same.....	6,000 00	
For public reservation number two and Lafayette square.....	10,000 00	
For taking care of the grounds south of the President's House and keeping them in order.....	2,000 00	
For repairs of water pipes.....	1,000 00	
For cleaning out the sewer traps on Pennsylvania avenue and repairing the same.....	500 00	
For repair of all the furnaces under the Capitol.....	300 00	
For repairing Delaware avenue, north of C street north.....	500 00	
For paying one-half of the expenses of sewer traps at the intersection of Fourth street west with E street north.....	1,000 00	
For the support, clothing, and medical treatment of the insane of the army and navy, and of the revenue service, and of the District of Columbia, at the asylum in said District.....	200 00	
For finishing, furnishing, heating, and lighting of additional accommodations in the east wing.....	40,500 00	
For improvements of the grounds about the hospital and farms.....	5,000 00	
	2,000 00	

Patent Office.—For collection of agricultural statistics, investigations for promoting agriculture and rural economy, and the procurement, propagation, and distribution of cuttings and seeds, of new and useful varieties, and for the introduction and protection of insectivorous birds, and for investigations to test the practicability of preparing flax and hemp as a substitute for cotton
For expense of receiving, arranging, and taking care of copyright books, charts, and other copyright matter
Exploring expeditions.—For preservation of the collections of the exploring and surveying expeditions of the government
Botanic garden.—For grading, draining, procuring manure, tools, fuel and repairs, purchasing trees and shrubs for botanic garden, to be expended under the direction of the Library Committee of Congress
For pay of horticulturist and assistants, in the botanic garden and greenhouses, to be expended under the direction of the Library Committee of Congress
Survey of the public lands.—For surveying the public lands, (exclusive of California, Oregon, Washington, New Mexico, Kansas, Nebraska, Utah, Dakota, Colorado, and Nevada,) including incidental expenses and island surveys in the interior, and all other special and difficult surveys demanding augmented rates, to be apportioned and applied to the several surveying districts according to the exigencies of the public service, including expenses of selecting swamp lands, in addition to the unexpended balances of all former appropriations for the same object, which will be absorbed by work under contract
For surveying the public lands and private land claims in California, to be disbursed at the rates prescribed by law for the different kinds of work
For surveying the public lands and private land claims in New Mexico
For surveying the public lands in Kansas and Nebraska, also outlines of Indian reservations
For salary of the clerk detailed for the special service in the General Land Office to attend to the unfinished surveys in the States where the offices of the surveyors general have been closed
For surveying the public lands in Oregon, to be disbursed at the rates authorized by law
For surveying the public lands in Washington Territory, at the rates authorized by law
For surveying the public lands in Dakota Territory
For surveying the public lands and private land claims confirmed in Colorado Territory
For surveying the public lands and private land claims confirmed in Nevada Territory
For the necessary expenses in carrying into effect the act of seventeenth July, eighteen hundred and sixty-one, and the act of the fifth August, eighteen hundred and sixty-one, in addition to the appropriations made by those acts
For support, care, and medical treatment of forty transient paupers, medical and surgical patients, in some proper medical institution in the city of Washington, to be selected by the Commissioner of Public Buildings
To supply a deficiency of appropriation for repairs of the Capitol, made by W. S. Wood, late Commissioner of Public Buildings

60,000 00
1,600 00
4,000 00
3,300 00
5,121 50

10,000 00
10,000 00
5,000 00
10,000 00

2,000 00
5,000 00
5,000 00
5,000 00
5,000 00
5,000 00

150,000 00

6,000 00
934 78

Amount carried forward

1,845,570 90

229,667,139 66

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$1, 845, 570 90	229, 667, 139 66
To enable the Commissioner of Public Buildings to pay for the purchase and repair of plate and repair of gas fittings for the President's House.....	2, 613 00	
For the necessary expenses in carrying into effect the act of seventeenth July, eighteen hundred and sixty-one, and the act of fifth August, eighteen hundred and sixty-one, in addition to the appropriations made by those acts for those objects.....	100, 000 00	
For amount required for clerks and messenger in the office of the assistant treasurer at Boston, from first January to the thirtieth June, eighteen hundred and sixty-two.....	1, 500 00	
For amount required for clerks, messenger, and watchmen in the office of the assistant treasurer at New York, from first January to the thirtieth June, eighteen hundred and sixty-two.....	5, 200 00	
For amount required for clerks and messenger in the office of the assistant treasurer at St. Louis, from first January to the thirtieth June, eighteen hundred and sixty-two.....	1, 800 00	
To enable the Commissioner of Public Buildings to pay for painting in the interior of the Capitol, and for general repairs.....	3, 200 00	
To enable the Commissioner of Public Buildings to have the old furnace under the library of Congress removed and a new one erected in its place.....	325 00	
For a deficiency on account of papering and painting the President's House in the autumn of eighteen hundred and sixty-one.....	4, 500 00	
To enable the Commissioner of Public Buildings to pay the bill of William H. Carryl & Brother for furniture for the President's House.....	6, 858 80	
To enable the Commissioner to pay a bill of P. & T. Berry for granite work and materials for the north front of the Patent Office building.....	7, 093 13	
To enable the Commissioner to pay five per cent. on eight thousand seven hundred and fifty-eight dollars and ten cents, retained on that sum, due P. & T. Berry on granite work on the west wing of the Patent Office building in eighteen hundred and fifty.....	437 94	
For support of patients in the government hospital.....	5, 000 00	
To pay J. B. Blake for work done by him when Commissioner of Public Buildings.....	22 18	
For expenses attending the removal to, and occupation of, building at corner of F and Fifteenth streets, for the Surgeon General's and Paymaster General's offices, for the six months ending June 30, 1862.....	7, 800 00	
For expenses of building corner of F and Fifteenth streets, occupied by the Surgeon General's and Paymaster General's offices.....	8, 800 00	
		2, 000, 720 95

By the act to provide for the appointment of additional clerks in the office of the assistant treasurer at New York, and for other purposes.

For the compensation for such additional clerks, messengers, and watchmen, as the exigences of the service may require, in the office of the assistant treasurer at New York for the current and next fiscal year.....
 For the compensation of the deputy assistant treasurer of the United States at New York.....
 For the purchase of blank checks for the use of the sub-treasury.....

Indefinite.
 3,000 00
 2,500 00

5,500 00

By the act to fulfil treaty stipulations with Hanover.

To enable the President to fulfil the stipulations contained in the third article of the treaty between the United States and Hanover of the sixth November, eighteen hundred and sixty-one.....
 To enable the President to fulfil the stipulations contained in the fourth article of the treaty between the United States and Hanover of the sixth of November, eighteen hundred and sixty-one, to pay the interest provided for in said article.....

43,454 16

1,042 90

44,497 06

By the act making appropriations for the legislative, executive, and judicial expenses of the government for the year ending thirtieth of June, eighteen hundred and sixty-three, and additional appropriations for the year ending thirtieth of June, eighteen hundred and sixty-two.

For compensation and mileage of senators.....
 For compensation of the officers, clerks, messengers, and others receiving an annual salary in the service of the Senate, viz :
 Secretary of the Senate.....
 Officer charged with the disbursements of the Senate.....
 Chief clerk.....
 Principal clerk and principal executive clerk in the office of the Secretary of the Senate, at two thousand one hundred and sixty dollars each.....
 Eight clerks in the office of the Secretary of the Senate, at one thousand eight hundred and fifty dollars each.....
 Keeper of the stationery.....
 Two messengers, at one thousand and eighty dollars each.....
 One page.....
 Sergeant-at-Arms and doorkeeper.....
 Assistant doorkeeper.....
 Postmaster to the Senate.....

240,430 00

3,600 00

480 00

2,500 00

4,320 00

14,800 00

1,752 00

2,160 00

500 00

2,000 00

1,700 00

1,750 00

275,992 00

231,717,857 67

Amount carried forward.....

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----	\$275,992 00	\$231,717,857 67
Assistant postmaster and mail carrier-----	1,440 00	
Two mail boys, at nine hundred dollars each-----	1,800 00	
Superintendent of the document room-----	1,500 00	
Two assistants in document room, at one thousand two hundred dollars each-----	2,400 00	
Superintendent of the folding room-----	1,500 00	
Two messengers, acting as assistant doorkeepers, at one thousand five hundred dollars each-----	3,000 00	
Seventeen messengers, at one thousand two hundred dollars each-----	20,400 00	
Superintendent in charge of Senate furnaces-----	1,200 00	
Assistant in charge of furnaces-----	600 00	
Laborer in private passage-----	600 00	
Two laborers, at four hundred and eighty dollars each-----	960 00	
Clerk or secretary to the President of the Senate-----	1,752 00	
Clerk to the Committee on Finance-----	1,850 00	
Clerk to the Committee of Claims-----	1,850 00	
Clerk of printing records-----	1,850 00	
Chaplain to the Senate-----	750 00	
For contingent expenses of the Senate, viz:-----		
For stationery-----	12,000 00	
For newspapers-----	3,000 00	
To pay John C. Rives for printing five hundred copies of the Diplomatic Correspondence of the United States from seventeen hundred and seventy-six to seventeen hundred and eighty-three for the State Department-----	15,000 00	
For printing the Congressional Globe and Appendix-----	18,000 00	
For reporting proceedings in the Daily Globe for the second regular session of thirty-seventh Congress-----	13,000 00	
For the usual additional compensation to the reporters of the Senate for the Congressional Globe for reporting the proceedings of the Senate for the second regular session of the thirty-seventh Congress, eight hundred dollars each-----	4,000 00	
For clerks to committees, pages, horses, and carryalls-----	15,500 00	
For Capitol police-----	10,224 00	
For expenses of heating and ventilating apparatus-----	14,000 00	
For miscellaneous items-----	20,000 00	
For compensation and mileage of members of the House of Representatives and delegates from Territories-----	620,000 00	

For compensation of the officers, clerks, messengers, and others receiving an annual salary in the service of the House of Representatives, viz :

Clerk of the House of Representatives.....	3,600 00
Two clerks, at two thousand one hundred and sixty dollars each.....	4,320 00
Eleven clerks, at one thousand eight hundred dollars each.....	19,800 00
Principal messenger in the office.....	1,752 00
Three messengers, at one thousand two hundred dollars each.....	3,600 00
Messenger to the Speaker.....	1,752 00
Clerk to the Committee of Ways and Means.....	1,800 00
Clerk to the Committee of Claims.....	1,800 00
Capitol police.....	10,620 00
Sergeant-at-Arms.....	2,160 00
Clerk to the Sergeant-at-Arms.....	1,800 00
Messenger to the Sergeant-at-Arms.....	1,200 00
Postmaster.....	2,160 00
One messenger in the office.....	1,740 00
Four messengers, at one thousand four hundred and forty dollars each.....	5,760 00
Two mail boys, at nine hundred dollars each.....	1,800 00
Doorkeeper.....	2,160 00
Superintendent of the folding room.....	1,800 00
Two messengers, at one thousand seven hundred and fifty-two dollars each.....	3,504 00
One messenger.....	1,740 00
Five messengers, at one thousand five hundred dollars each.....	7,500 00
Six messengers, at one thousand two hundred dollars each.....	7,200 00
Eleven messengers, to be employed during the session of Congress, at the rate of one thousand two hundred dollars each per annum.....	3,300 00
Chaplain to the House of Representatives.....	750 00
For contingent expenses of the House of Representatives, viz :	
For cartage.....	2,000 00
For twenty-four copies of the Congressional Globe and Appendix for each member and delegate of the second regular session of the thirty-seventh Congress, and one hundred copies of the same for the House library.....	14,000 00
For the compensation of clerks to committees and temporary clerks in the office of the Clerk of the House of Representatives.....	14,400 00
For folding documents, including materials.....	30,000 00
For fuel and lights, including pay of engineers, firemen and laborers, repairs, and materials for engine-room.....	12,000 00
For furniture, repairs, and packing boxes for members.....	10,000 00
For stationery.....	12,000 00

1,252,186 00

231,717,857 67

Amount carried forward.....

STATEMENT—Continued.

16

APPROPRIATIONS, NEW OFFICERS, ETC.

Object of appropriation.	Amount.	Total.
For horses, carriages, and saddle horses-----	\$1,252,186 00	231,717,857 67
For laborers-----	7,500 00	
For miscellaneous items-----	7,000 00	
For newspapers-----	30,000 00	
For pages and temporary mail boys-----	12,500 00	
For reporting proceedings in the Daily Globe for the second regular session of the thirty-seventh Congress, at seven dollars and fifty cents per column-----	4,800 00	
For the usual additional compensation to the reporters of the House for the Congressional Globe for reporting the proceedings of the House for the second regular session of the thirty-seventh Congress, eight hundred dollars each-----	8,000 00	
Library of Congress.—For compensation of librarian, three assistant librarians, messenger, and laborers-----	4,000 00	
For contingent expenses of said library-----	10,000 00	
For purchase of books for said library-----	1,000 00	
For purchase of law books for said library-----	5,000 00	9,714 00
Public printing.—For compensation of the Superintendent of Public Printing and the clerks and messenger in his office-----	2,000 00	
For contingent expenses of his office, viz: For blank-books, stationery, postage, advertising for proposals for paper, furniture, travelling expenses, cartage, and labor in storing and transportation of paper, and miscellaneous items-----	2,700 00	
For the public printing-----	125,484 52	
For paper for the public printing-----	183,569 00	
For lithographing and engraving, viz: Senate-----	40,000 00	
House of Representatives-----	50,000 00	
For the public binding-----	226,840 75	
Court of Claims.—For salaries of three judges of the Court of Claims, the solicitor, assistant solicitor, deputy solicitor, clerk, and assistant clerk and messenger thereof-----	27,300 00	25,000 00
Executive.—For compensation of the President of the United States-----	25,000 00	
For compensation of the Vice-President of the United States-----	8,000 00	
For compensation of secretary to sign patents for lands-----	1,500 00	
For compensation to the private secretary, steward, and messenger of the President of the United States-----	4,600 00	

1,000 00

For contingent expenses of the executive office, including stationery therefor

DEPARTMENT OF STATE.

For compensation of the Secretary of State and Assistant Secretary of State, clerks, messenger, assistant messenger, and laborers in his office

57,800 00

For the incidental and contingent expenses of said department:

For losses on drafts of consuls, marshals of the United States, consular courts, and interpreters for the periods ending June thirtieth, eighteen hundred and sixty-three.....

10,000 00

For rent of prison, wages of keepers of the same, and care of offenders at Amoy, from July first, eighteen hundred and sixty, to June thirtieth, eighteen hundred and sixty-one, in pursuance of the provisions of the act approved June twenty second, eighteen hundred and sixty.....

858 27

For publishing the laws in pamphlet form and in newspapers of the States and Territories and in the city of Washington

17,125 00

For proof-reading and packing the laws and documents for the various legations and consulates, including boxes and transportation of the same.....

5,000 00

For stationery, blank books, binding, furniture, fixtures, and repairs.....

10,000 00

For miscellaneous items

2,500 00

For copper plate printing, books, and maps.....

2,000 00

For extra clerk hire and copying.....

5,000 00

Northeast executive building.—For compensation of four watchmen and two laborers of the northeast executive building

3,600 00

For contingent expenses of said building, viz:

For fuel, light, repairs, and miscellaneous expenses

4,500 00

TREASURY DEPARTMENT.

For compensation of the Secretary of the Treasury, Assistant Secretary of the Treasury, clerks, messenger, assistant messenger, and laborers in his office.....

53,800 00

For compensation of the First Comptroller, and the clerks, messenger, and laborers in his office.....

33,740 00

For compensation of the Second Comptroller, and the clerks, messenger, and laborer in his office.....

28,240 00

For compensation of the First Auditor, and the clerks, messenger, assistant messenger, and laborer in his office

42,940 00

For compensation of the Second Auditor, and the clerks, messenger, assistant messenger, and laborer in his office

38,140 00

For compensation of the Third Auditor, and the clerks, messenger, assistant messenger, and laborers in his office

93,440 00

Amount carried forward.....

2,458,377 54

231,717,857 67

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$2,458,377 54	\$231,717,857 67
For compensation of the Fourth Auditor, and the clerks, messenger, and assistant messenger in his office.....	31,940 00	
For compensation of the Fifth Auditor, and the clerks, messenger, and laborer in his office.....	17,840 00	
For compensation of the Auditor of the Treasury for the Post Office Department, and the clerks, messenger, assistant messenger, and laborers in his office.....	182,740 00	
For compensation of the Treasurer of the United States, and the clerks, messenger, assistant messenger, and laborers in his office.....	28,740 00	
For compensation of the Register of the Treasury, and the clerks, messenger, assistant messenger, and laborers in his office.....	53,340 00	
For compensation of the Solicitor of the Treasury, and the clerks and messenger in his office.....	18,540 00	
For compensation of the Commissioner of Customs, and the clerks, messenger, and laborer in his office.....	20,440 00	
For compensation of the clerks, messenger, and laborer of the Light-house Board.....	9,240 00	
<i>Contingent expenses of the Treasury Department.</i>		
In the office of the Secretary of the Treasury:		
For copying, labor, blank books, binding, sealing ships' registers, translating foreign languages, advertising, and extra clerk hire for preparing and collecting information to be laid before Congress, and for miscellaneous items.....	20,000 00	
For compensation of additional clerks who may be employed by the Secretary, according to the exigencies of the public service.....	50,000 00	
In the office of the First Comptroller:		
For furniture, blank books, binding, stationery, public documents, State and territorial statutes, and miscellaneous items.....	1,800 00	
In the office of the Second Comptroller:		
For blank books, binding, stationery, and miscellaneous items, including subscription to the National Intelligencer, to be bound and preserved for the use of the office.....	1,200 00	
In the office of the First Auditor:		
For blank books, binding, stationery, and miscellaneous items, subscription to the National Intelligencer, including one thousand five hundred dollars for furnishing rooms in the Treasury building for the office, and expenses of removing the office from its present location.....	3,000 00	
In the office of the Second Auditor:		

For blank books, binding, stationery, furniture, and miscellaneous items, including two of the daily city newspapers, to be filed, bound, and preserved for the use of the office, and for additional office furniture for the contemplated increase of the clerical force of the office.....	2,000 00	
In the office of the Third Auditor:		
For blank books, binding, stationery, office furniture, carpeting, two newspapers, preserving files and papers, bounty land service, and miscellaneous items.....	2,200 00	
In the office of the Fourth Auditor:		
For contingent expenses of the office.....	1,500 00	
In the office of the Fifth Auditor:		
For blank books, binding, office furniture, and miscellaneous expenses, in which are included two daily newspapers.....	1,000 00	
In the office of the Auditor of the Treasury for the Post Office Department:		
For blank books, binding and ruling, furniture, carpeting, stationery, horses and carriages for the use of the office, labor, lights, and miscellaneous items.....	10,150 00	
In the office of the Treasurer:		
For contingent expenses of the office.....	1,500 00	
In the office of the Register:		
For ruling and full binding books for recording collectors' quarterly abstracts of commerce and navigation, and blank abstracts for their use, blank books, binding, and stationery, arranging and binding cancelled marine papers, cases for official papers and records, and miscellaneous items, including office furniture and carpeting.....	6,000 00	
Office of the Solicitor of the Treasury:		
For blank books, binding, stationery, labor, and miscellaneous items, and for statutes and reports.....	2,200 00	
Office of the Commissioner of Customs:		
For blank books, stationery, and miscellaneous items.....	2,000 00	
Light-house Board:		
For stationery, miscellaneous expenses, and postage.....	600 00	
For the general purposes of the southeast executive building, including the extension:		
For compensation of twelve watchmen and eleven laborers of the southeast executive building.....	13,800 00	
For contingent expenses of said building, fuel, light, labor, and miscellaneous items.....	20,000 00	
DEPARTMENT OF THE INTERIOR.		
For compensation of the Secretary of the Interior, and the clerks, messenger, assistant messengers, watchmen, and laborers in his office.....	41,700 00	
For compensation of the Commissioner of the General Land Office, and the recorder, draughtsman, assistant draughtsman, clerks, messengers, assistant messengers, packers, watchmen, and laborers in his office.....	175,440 00	
Amount carried forward.....	3,177,287 54	231,717,857 67

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----	\$3,177,287 54	\$231,717,857 67
For additional clerks in the General Land Office, under the act of third of March, one thousand eight hundred and fifty-five, granting bounty land, and for laborers employed therein-----	58,400 00	
For compensation of the Commissioner of Indian Affairs, and the clerks, messenger, watchmen, and laborer in his office-----	31,940 00	
For compensation of the Commissioner of Pensions, and the clerks, messenger, assistant messengers, watchmen, and laborers in his office-----	110,540 00	
<i>Contingent Expenses of the Department of the Interior.</i>		
Office of the Secretary of the Interior:		
For books, stationery, furniture, fuel, lights, and other contingencies, and for books and maps for the library-----	7,000 00	
For casual repairs of the Patent Office building-----	1,500 00	
For expenses of packing and distributing congressional journals and documents, in pursuance of the provisions contained in the joint resolution of Congress approved twenty-eighth January, eighteen hundred and fifty-seven, and act of February fifth, eighteen hundred and fifty-nine-----	6,000 00	
Office of Indian affairs:		
For blank books, binding, stationery, fuel, lights, and miscellaneous items, including two of the daily city newspapers, to be filed, bound, and preserved for the use of the office-----	5,000 00	
General Land Office:		
For cash system and military patents, under laws prior to thirtieth September, eighteen hundred and fifty; patent and other records; tract books and blank books for this and the district land offices; binding plats and field notes; stationery, furniture, and repairs of the same, and miscellaneous items, including two of the daily city newspapers, to be filed, bound, and preserved for the use of the office; also for contingent expenses, in addition, under swamp-land act of twenty-eighth September, eighteen hundred and fifty, and twenty-second March, eighteen hundred and fifty-two, and act thirty-first August, eighteen hundred and fifty-two, for the satisfaction of Virginia land warrants; and for contingent expenses under act of third March, eighteen hundred and fifty-five, granting bounty lands, patent, and other records, stationery, and miscellaneous items, on account of bounty land under said act-----	30,000 00	
For fuel, lights, and incidental expenses attending the same, including pay of furnace keeper-----	2,000 00	
Pension Office:		
For stationery, binding books, furniture, and repairing the same; miscellaneous items, including two daily		

city newspapers, to be filed, bound, and preserved for the use of the office; and for engraving and retouching plates for bounty land warrants, printing and binding the same.....	10,000 00	
For compensation of Commissioner of Public Buildings, and the clerk and messenger in his office.....	4,200 00	
For stationery, blank books, plans, drawings, and other contingent expenses of the office of the Commissioner of Public Buildings.....	500 00	
<i>Surveyors general and their clerks.</i> —For compensation of the surveyor general of Wisconsin and Iowa, and the clerks in his office.....	8,300 00	
For compensation of the surveyor general of Oregon, and the clerks in his office.....	7,500 00	
For compensation of the surveyor general of California, and the clerks in his office.....	15,500 00	
For compensation of the surveyor general of Washington Territory, and the clerks in his office.....	7,000 00	
For compensation of the surveyor general of New Mexico, and the clerks in his office.....	7,000 00	
For compensation of translator in the office of the surveyor general of New Mexico.....	1,826 09	
For compensation of the surveyor general of Kansas and Nebraska, and the clerks in his office.....	8,300 00	
For compensation of the surveyor general of Minnesota, and the clerks in his office.....	8,300 00	
For compensation of the surveyor general of the Territory of Colorado, and the clerks in his office.....	7,000 00	
For compensation of the surveyor general of the Territory of Dakota, and the clerks in his office.....	8,300 00	
For rent of surveyor general's office in Oregon, fuel, books, stationery, and other incidental expenses.....	1,400 00	
For rent of surveyor general's office in California, fuel, books, stationery, and other incidental expenses, including pay of messenger.....	4,000 00	
For office rent for the surveyor general of Washington Territory, fuel, books, stationery, and other incidental expenses.....	2,000 00	
For rent of the surveyor general's office in New Mexico, fuel, books, stationery, and other incidental expenses.....	2,914 36	
For office rent of the surveyor general of Kansas and Nebraska, fuel, books, and incidental expenses.....	2,000 00	
For rent of the surveyor general's office in the Territory of Colorado, fuel, books, stationery, and other incidental expenses.....	2,000 00	
For rent of the surveyor general's office in the Territory of Dakota, fuel, books, stationery, and other incidental expenses.....	2,000 00	
For salary of the recorder of land titles in Missouri.....	2,000 00	
	500 00	
	25,000 00	
	10,680 00	
	63,360 00	
	3,639,247 99	231,717,857 67

WAR DEPARTMENT.

For compensation of the Secretary of War, and the clerks, messenger, assistant messenger, and laborer in his office.....

For compensation of the temporary clerks and messengers in the office of the Secretary of War.....

For compensation of additional clerks, messengers, and laborers in the offices of the Secretary of War, Adjutant General, Surgeon General, Quartermaster General, Paymaster General, Chief Engineer, Chief of Ordnance, and Commissary General, appointed under authority of act of January twenty-seven, eighteen hundred and sixty-two.....

Amount carried forward.....

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----	\$3,639,247 99	\$231,717,857 67
For compensation of the clerks and messenger in the office of the Adjutant General-----	13,640 00	
For compensation of the clerks and messenger in the office of the Quartermaster General-----	16,440 00	
For compensation of the temporary clerks and messengers in the Quartermaster General's office-----	15,480 00	
For compensation of the clerks and messenger in the office of the Paymaster General-----	12,440 00	
For compensation of the temporary clerks in the office of the Paymaster General-----	9,000 00	
For compensation of the clerks, messenger, and laborer in the office of the Commissary General-----	10,040 00	
For compensation of the temporary clerks in the office of the Commissary General-----	6,400 00	
For compensation of the clerks and messenger in the office of the Surgeon General-----	5,240 00	
For compensation of the temporary clerk in the office of the Surgeon General-----	1,600 00	
For compensation of the clerks, messenger, and laborer in the office of Topographical Engineers-----	10,640 00	
For compensation of temporary clerks in the office of Topographical Engineers-----	3,200 00	
For compensation of the clerks and messenger in the office of the Chief Engineer-----	8,240 00	
For compensation of the clerks and messenger in the office of the Colonel of Ordnance-----	12,240 00	
For compensation of the temporary clerks in the office of the Colonel of Ordnance-----	2,400 00	
<i>Contingent expenses of the War Department.</i>		
Office of the Secretary of War:		
For blank books, stationery, books, maps, extra clerk hire, and miscellaneous items-----	8,000 00	
Office of the Adjutant General:		
For blank books, binding, stationery, and miscellaneous items-----	3,200 00	
Office of the Quartermaster General:		
For blank books, binding, stationery, and miscellaneous items-----	4,000 00	
Office of the Paymaster General:		
For blank books, binding, stationery, and miscellaneous items-----	1,500 00	
Office of the Chief Engineer:		
For blank books, binding, stationery, and miscellaneous items-----	1,500 00	
Office of the Surgeon General:		
For blank books, binding, stationery, and miscellaneous items-----	1,000 00	
Office of the Colonel of Ordnance:		
For blank books, binding, stationery, and miscellaneous items-----	2,000 00	

Office of the Colonel of Topographical Engineers:		
For blank books, binding, stationery, and miscellaneous items.....	2,000 00	
For the general purposes of the northwest executive building:		
For compensation of superintendent, four watchmen, and two laborers of the northwest executive building--	3,850 00	
For labor, fuel, light, and miscellaneous items.....	5,000 00	
For the general purposes of the building corner of F and Seventeenth streets:		
For compensation of superintendent, four watchmen, and two laborers for said building -	3,850 00	
For fuel, compensation of firemen, and miscellaneous items.....	5,500 00	
NAVY DEPARTMENT.		
For compensation of the Secretary of the Navy, Assistant Secretary of the Navy, and the clerks, messenger, assistant messenger, and laborer in his office	43,200 00	
For compensation of additional clerks in the office of the Secretary of the Navy, appointed under authority of act of the twenty-seventh of January, eighteen hundred and sixty-two.....	4,800 00	
For compensation of the Chief of the Bureau of Navy Yards and Docks, and the clerks, messenger, and laborer in his office	14,140 00	
For compensation of the Chief of the Bureau of Ordnance and Hydrography, and the clerks, messenger, and laborer in his office	12,340 00	
For compensation of the Chief of the Bureau of Construction, Equipment, and Repairs, and of the engineer-in-chief, and the clerks, messenger, and laborers in his office	21,340 00	
For compensation of the clerks, messenger, and laborer in the Bureau of Provisions and Clothing	8,840 00	
For compensation of the Chief of the Bureau of Medicine and Surgery, and the clerks, messenger, and laborer in his office.....	9,540 00	
Contingent expenses of the Navy Department.		
Office Secretary of the Navy:		
For blank books, binding, stationery, labor, plans, drawings, maps, newspapers, books, periodicals, and miscellaneous items	2,840 00	
Bureau of Yards and Docks:		
For stationery, books, plans, drawings, and miscellaneous items.....	800 00	
Bureau of Ordnance and Hydrography:		
For blank books, stationery, and miscellaneous items.....	750 00	
Bureau of Construction, Equipment, and Repairs:		
For blank books, binding, stationery, printing, and miscellaneous items	800 00	
Amount carried forward.....	3,927,037 99	231,717,857 67

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$3,927,037 99	\$231,717,857 67
Bureau of Provisions and Clothing: For blank books, stationery, and miscellaneous items.....	700 00	
Bureau of Medicine and Surgery: For blank books, stationery, and miscellaneous items.....	450 00	
For the general purposes of the southwest executive building: For compensation of five watchmen of the southwest executive building.....	3,000 00	
For labor, fuel, lights, and miscellaneous items.....	4,400 00	
POST OFFICE DEPARTMENT.		
For compensation of the Postmaster General, three Assistant Postmasters General, and the clerks, messenger, assistant messengers, watchmen, and laborers of said department.....	158,220 00	
For compensation of twenty-five additional clerks, to be appointed by the Postmaster General under the second section of the act entitled "An act to promote the efficiency of the dead-letter office," approved January twenty-first, eighteen hundred and sixty-two.....	20,000 00	
<i>Contingent expenses of the Post Office Department.</i>		
For blank books, binding, and stationery; fuel for the General Post Office building, including the Auditor's office; oil, gas, and candles; printing; repairs of the General Post Office building, office furniture, glazing, painting, whitewashing, and for keeping the fireplaces and furnaces in order; for watchmen, engineer, (for steam-engine,) laborers, repairs of furniture, and for miscellaneous items.....	30,000 00	
MINT OF THE UNITED STATES, AT PHILADELPHIA.		
For salaries of the director, treasurer, assayer, melter and refiner, chief coiner and engraver, assistant assayer, assistant melter and refiner, and seven clerks.....	27,900 00	
For wages of workmen and adjusters.....	111,800 00	
For incidental and contingent expenses, including repairs and wastage.....	50,000 00	
For specimens of ores and coins to be preserved in the cabinet at the mint.....	300 00	
For transportation of bullion from New York assay office to the United States mint for coinage.....	20,000 00	

<i>At San Francisco, California.</i> —For salaries of superintendent, treasurer, assayer, melter and refiner, coiner, and six clerks.....	30,500 00	
For wages of workmen and adjusters.....	105,000 00	
For incidental and contingent expenses.....	45,040 00	
<i>Assay office, New York.</i> —For salaries of officers and clerks.....	24,900 00	
For wages of workmen.....	40,000 00	
For incidental and contingent expenses in addition to other available means.....	35,000 00	
GOVERNMENTS IN TERRITORIES.		
<i>Territory of New Mexico.</i> —For salaries of governor, three judges, and secretary.....	12,000 00	
For contingent expenses of said Territory.....	1,000 00	
For interpreter and translator in the executive office.....	500 00	
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly.....	20,000 00	
<i>Territory of Utah.</i> —For salaries of governor, three judges, and secretary.....	12,000 00	
For contingent expenses of said Territory.....	1,500 00	
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly.....	20,000 00	
<i>Territory of Washington.</i> —For salaries of governor, three judges, and secretary.....	12,500 00	
For contingent expenses of said Territory.....	1,500 00	
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly.....	20,000 00	
<i>Territory of Nebraska.</i> —For salaries of governor, three judges, and secretary.....	10,500 00	
For contingent expenses of said Territory.....	1,000 00	
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly.....	20,000 00	
<i>Territory of Colorado.</i> —For salaries of governor, three judges, and secretary.....	9,700 00	
For contingent expenses of said Territory.....	1,000 00	
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly.....	20,000 00	
<i>Territory of Nevada.</i> —For salaries of governor, three judges, and secretary.....	9,700 00	
For contingent expenses of said Territory.....	1,000 00	
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly.....	20,000 00	
<i>Territory of Dakota.</i> —For salaries of governor, three judges, and secretary.....	9,700 00	
For contingent expenses of said Territory.....	1,000 00	
Amount carried forward.....	4,838,847 99	231,717,857 67

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$4,838,847 99	\$231,717,857 67
For compensation and mileage of the members of the legislative assembly, officers, clerks, and contingent expenses of the assembly	20,000 00	
JUDICIARY.		
For salaries of the chief justice of the Supreme Court and eight associate justices.....	54,500 00	
For salaries of the district judges	115,750 00	
For salary of the circuit judge of California.....	6,000 00	
For salaries of the chief justice of the District of Columbia, the associate judges, and the judges of the criminal and the orphans' courts.....	15,750 00	
Office of the Attorney General.—For salaries of the Attorney General, Assistant Attorney General, and the clerks and messenger in his office.....	20,300 00	
Contingent expenses of the office of the Attorney General, namely:		
For fuel, labor, furniture, stationery, and miscellaneous items.....	3,000 00	
For purchase of law and necessary books for the office of the Attorney General.....	250 00	
For legal assistance and other necessary expenditures in the disposal of private land claims in California.....	10,000 00	
For special and other extraordinary expenses of California land claims	20,000 00	
For salary of the reporter of the decisions of the Supreme Court.....	1,300 00	
For compensation of the district attorneys.....	18,550 00	
For compensation of the marshals	11,000 00	
For defraying the expenses of the Supreme, circuit, and district courts of the United States, including the District of Columbia; also for jurors and witnesses in aid of the funds arising from fines, penalties, and forfeitures incurred in the fiscal year ending June thirtieth, eighteen hundred and sixty-three, and previous years; and likewise for defraying the expenses of suits in which the United States are concerned, and of prosecutions for offences committed against the United States, and for safe-keeping of prisoners.....	1,000,000 00	
INDEPENDENT TREASURY.		
For salaries of the assistant treasurers of the United States at New York, Boston, Charleston, and St. Louis ..	16,500 00	
For additional salary of the treasurer of the mint at Philadelphia	1,000 00	
For additional salary of the treasurer of the mint at New Orleans	500 00	

For salaries of five additional clerks authorized by the acts of sixth August, eighteen hundred and forty-six, and paid under acts of twelfth August, eighteen hundred and forty-eight, third March, eighteen hundred and fifty-one, third March, eighteen hundred and fifty-five, and twenty-seventh July, eighteen hundred and sixty-one.....	6,000 00	
For salary of additional clerks, messengers, and watchmen in office of assistant treasurer at Boston.....	5,900 00	
For salaries of clerks, messengers, and watchmen in the office of the assistant treasurer at New York.....	21,100 00	
For additional amount for clerks, messenger, and watchmen in office of assistant treasurer at New York.....	10,400 00	
For salaries of clerks, messengers, and laborers in the office of the assistant treasurer at St. Louis.....	4,500 00	
For salaries of nine supervising and fifty local inspectors, appointed under the act of thirtieth August, eighteen hundred and fifty-two, for the better protection of the lives of passengers, by steamboats, with travelling and other expenses incurred by them.....	80,000 00	
For contingent expenses under the act sixth August, eighteen hundred and forty-six, for the safe-keeping, collection, transfer, and disbursement of the public revenue, in addition to premium which has been or may be received on transfer drafts.....	5,000 00	
For compensation to the laborer in charge of the water-closets in the Capitol.....	438 00	
For compensation to the public gardener.....	1,440 00	
For compensation of a foreman and twenty-one laborers employed in the public grounds.....	13,400 00	
For compensation of the keeper of the western gate of Capitol square.....	876 00	
For compensation of two day watchmen employed in the Capitol square.....	1,200 00	
For compensation of two night watchmen employed at the President's House.....	1,200 00	
For compensation of the doorkeeper at the President's House.....	600 00	
For compensation of the assistant doorkeeper at the President's House.....	600 00	
For compensation of one night watchman employed for the better protection of the buildings lying south of the Capitol and used as public stables and carpenters' shops.....	600 00	
For compensation of watchmen employed on reservation number two.....	600 00	
For compensation of four drawkeepers at the Potomac bridge, and for fuel, oil, and lamps.....	3,266 00	
For compensation of two drawkeepers at the two bridges across the eastern branch of the Potomac, and for fuel, oil, and lamps.....	1,180 00	
For salary and other necessary expenses of the metropolitan police for the District of Columbia.....	100,000 00	
For furnace keeper at the President's House.....	600 00	
To enable the Commissioner of Public Buildings to employ a keeper of the three furnaces under the old hall of the House of Representatives.....	600 00	
For a deficiency for the present fiscal year for keeping said furnaces nine months.....	400 00	
Amount carried forward.....	6,413,147 99	231,717,857 67

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$6,413,147 99	\$231,717,857 67
<i>Expenses of the collection of revenue from lands.</i>		
To meet the expenses of collecting the revenue from the sale of public lands in the several States and Territories:		
For salaries and commissions of registers of land offices and receivers of public moneys.....	215,200 00	
For expenses of depositing public moneys by receivers of public moneys.....	27,550 00	
For incidental expenses of the several land offices.....	40,000 00	
<i>Penitentiary.</i>		
For compensation of the warden, clerk, physician, chaplain, assistant keepers, guards, and matron of the penitentiary of the District of Columbia.....	16,080 00	
For compensation of three inspectors of said penitentiary.....	750 00	
For the support and maintenance of said penitentiary.....	13,293 75	
<i>For the service of the fiscal year ending thirtieth of June, eighteen hundred and sixty-two, viz:</i>		
For keeping in repair and partially finishing and furnishing the Post Office building, to be expended under the direction of the Postmaster General.....	20,000 00	
For paper and printing blanks for the executive departments.....	30,000 00	
For compensation of the officers, clerks, messengers, and others receiving an annual salary in the employ of the House of Representatives.....	3,767 24	
For compensation of clerks to committees and temporary clerks in the office of the Clerk of the House of Representatives.....	812 00	
For twenty-four copies of the Congressional Globe and Appendix for each member and delegate in the first regular session of the thirty-seventh Congress.....	4,778 40	
For folding documents.....	10,000 00	
For furniture and repairs and boxes for members.....	7,000 00	
For newspapers.....	9,300 00	
For stationery.....	8,370 00	

For contingent expenses of the Senate, namely:

For compensation of three messengers, appointed under authority of a resolution of the Senate of July nineteenth, eighteen hundred and sixty one	3,600 00
For binding	20,000 00
For lithographing and engraving	30,000 00
For stationery	12,000 00
For reporting proceedings	3,000 00
For Congressional Globe and Appendix at the first session of the thirty-seventh Congress	6,184 20
For clerks to committees, pages, horses, and carryalls	7,000 00
For miscellaneous items	30,000 00
For Capitol police	1,500 00
For compensation of the surveyor general of Illinois and Missouri	2,000 00
For rent of the surveyor general's office in New Mexico, fuel, books, stationery, and other incident expenses	914 36
For contingent expenses of the office of the Fourth Auditor	700 00
For the payment of the salaries of two clerks in the Attorney General's office, appointed under authority of the act of second August, eighteen hundred and sixty-one	1,400 00
For compensation of additional clerks, messengers, and laborers in the offices of the Secretary of War, Adjutant General, Surgeon General, Quartermaster General, Paymaster General, Chief Engineer, Chief of Ordnance, and Commissary General, appointed under authority of act of January twenty-seventh, eighteen hundred and sixty-two	26,400 00
For compensation of two Assistant Secretaries of War, appointed under act of January twenty-two, eighteen hundred and sixty-two, one year from the date of their appointment	6,000 00
For compensation of additional clerks in the office of the Secretary of the Navy, authorized by act of January twenty-seventh eighteen hundred and sixty-two	2,000 00
For necessary expenses for supply of water pipes, hydrants, hose apparatus, and employment of firemen for the protection of public stores and hospitals in the city of Washington, to be expended under the direction of the Secretary of War	10,000 00
To enable the Commissioner of Public Buildings to replace the thin glass in the roof of the Library of Congress with glass of a proper thickness and to ventilate the library	900 00
For putting the plates of the exploring expedition in order for preservation and transporting them and the other effects of the expedition to Washington, to be preserved in some of the public buildings or at the Smithsonian Institution, to be expended under the Joint Committee on the Library of Congress	2,000 00
For completing the work on the Patent Office building so far as to preserve the materials already prepared	15,000 00
To pay the mileage and salaries of John Kline, Joseph Segar, and John M. Butler, while contesting seats in the House of Representatives, per resolution of the House of Representatives of March fourth, eighteen hundred and sixty-two	9,000 00

7,009,647 94

238,727,505 61

Amount carried forward

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	-----	\$238,727,505 61
<i>By the act for a joint commission for the preservation of the Atlantic fisheries.</i>		
To enable the President to carry into effect this act.....	-----	3,000 00
<i>By the act to amend "An act to incorporate the Columbia Institution for the instruction of the Deaf and Dumb and the Blind," and to make appropriations for the benefit thereof.</i>		
For the payment of salaries and incidental expenses of said institution.....	\$4,400 00	
For the erection, furnishing, and fitting up of two additions to the buildings of said institution.....	9,000 00	
<i>By the act to provide for the appointment of clerks in the office of the assistant treasurer at Boston, to fix their salaries, and provide for the absence of the assistant treasurer, and for o'her purposes.</i>		13,400 00
For the compensation of one chief clerk, one disbursing clerk, and one other clerk, and one messenger for the current and next fiscal year	-----	Indefinite.
<i>By the act for the release of certain persons held to service or labor in the District of Columbia.</i>		
For the purpose of carrying this act into effect.....		
To aid in the colonization and settlement of such free persons of African descent now residing in said District as may desire to emigrate to the republics of Hayti or Liberia, or such other country beyond the limits of the United States as the President may determine.....	1,000,000 00	
For compensation of three commissioners for their services	100,000 00	
For compensation of a clerk.....	6,000 00	
For reasonable contingent expenses	1,800 00	
<i>By the act making additional appropriations for the naval service for the year ending June thirtieth, eighteen hundred and sixty-two.</i>	Indefinite.	1,107,800 00
For the purchase of vessels and necessary alterations incurred in fitting them for service.....	2,530,000 00	
For the purchase of additional vessels	2,000,000 00	

For the purchase of nautical instruments, books, maps, and charts	20,000 00	
For repairs at observatory, freight, and transportation	3,000 00	
For the ordnance foundery at the Washington navy yard	50,000 00	
For ordnance	1,000,000 00	
To pay for and finish the Stevens' battery now partially constructed at Hoboken, New Jersey	783,294 00	
To enable the Secretary of the Navy to construct iron-clad steam vessels-of-war	13,000,000 00	
		19,386,294 00
<i>By the act making appropriations for the service of the Post Office Department during the fiscal year ending the thirtieth of June, eighteen hundred and sixty-three.</i>		
For transportation of the mails, (inland)	6,961,000 00	
For compensation to postmasters	2,234,000 00	
For clerks in the offices of postmasters	846,000 00	
For ship, steamboat, and way letters	12,000 00	
For office furniture in the post offices	2,000 00	
For advertising	36,000 00	
For mail bags	75,000 00	
For wrapping paper	45,000 00	
For mail locks, keys, and stamps	56,000 00	
For mail depredations and special agents	75,000 00	
For miscellaneous payments	187,000 00	
For postage stamps and stamped envelopes	90,000 00	
For payments of balances due to foreign countries	230,000 00	
For payments to letter carriers	152,000 00	
For transportation of foreign mails	465,000 00	
For compensation of twenty-five additional clerks in the Post Office Department, authorized by the "act to promote the efficiency of the Dead Letter Office," approved January twenty-first, eighteen hundred and sixty-two, from the date of their appointment to the thirtieth of June, eighteen hundred and sixty-two.....	8,800 00	
To supply deficiencies in the revenue of the Post Office Department for the year ending the thirtieth of June, eighteen hundred and sixty-three	2,120,000 00	
For the service of the California central route	1,000,000 00	
		14,594,800 00
<i>By the act to establish a branch mint of the United States, at Denver, in the Territory of Colorado.</i>		
To establish a branch mint of the United States, at Denver, in the Territory of Colorado, and to meet the expenses of the current year, and for the fiscal year ending the thirtieth of June, eighteen hundred and sixty-three		75,000 00
		273,907,799 61

Amount carried forward.....

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----	-----	\$273,907,799 61
<i>By the act to provide for the deficiency in the appropriation for the pay of the two and three years' volunteers, and the officers and men actually employed in the western department.</i>		
To pay the two and three years' volunteers called into the service of the United States, being an additional amount required for the fiscal year ending June thirtieth, eighteen hundred and sixty-two-----	\$30,000,000 00	
To carry into effect the act approved March twenty-fifth, eighteen hundred and sixty-two, to secure pay, bounty, and pensions to officers and men actually employed in the western department, or department of Missouri-----	100,000 00	
		30,100,000 00
<i>By the act making appropriations to reimburse the contingent fund of the office of the Secretary of the Treasury, including compensation of additional clerks, who may be employed according to the exigencies of the public service, and for temporary clerks for the current fiscal year, and for the year ending June thirtieth, eighteen hundred and sixty-three, and to provide for the employment of additional clerks in the office of the assistant treasurer at St. Louis.</i>		
To reimburse the contingent fund of the office of the Secretary of the Treasury for additional clerks authorized by the act of July twenty-seventh, eighteen hundred and sixty-one, and for temporary clerks in the Treasury Department for the year ending thirtieth of June, eighteen hundred and sixty-two-----	50,650 00	
For temporary clerks in the Treasury Department for the year ending June thirtieth, eighteen hundred and sixty-three-----	103,000 00	
For the necessary furniture, stationery, and labor consequent upon the increased clerical force-----	7,000 00	
To pay the salaries of the chief clerk and assistant clerk in the office of the assistant treasurer at St. Louis, for the fiscal year ending June thirtieth, eighteen hundred and sixty-three-----	3,000 00	
		163,650 00
<i>By the act making provision for raising property of the United States sunk in the waters thereof.</i>		
To enable the Secretary of the Navy to contract with such person or persons as he shall deem best for the public service for raising such vessels, their armament, stores, or equipments, belonging to the United States and sunk in the waters thereof-----	-----	100,000 00

<i>By the act making appropriations for postal service on post routes established at the present session of Congress.</i>			
For postal service on such mail routes established by the present Congress as the Postmaster General may deem expedient and necessary.....		150,000 00	
<i>By the act to provide internal revenue to support the government and to pay interest on the public debt.</i>			
To pay the salaries of the Commissioner of Internal Revenue and clerks, and to procure dies, stamps, adhesive stamps, paper, printing forms and regulations, advertising, and any other expenses of carrying this act into effect.....		500,000 00	
<i>By the act making appropriations for the support of the army for the year ending the thirtieth of June, eighteen hundred and sixty-three, and additional appropriations for the year ending thirtieth of June, eighteen hundred and sixty-two, and for other purposes</i>			
For the recruiting of the army, namely:			
For the enlistment of recruits, for quarters, fuel, stationery, straw, postage, bunks, compensation to citizen surgeons for medical attendance, transportation from rendezvous to depots, and all other expenses until put in march to join regiments.....	180,000 00		
For purchase of books of tactics and instruction for volunteers.....	50,000 00		
For pay of the army.....	8,905,318 00		
For commutation of officers' subsistence.....	1,574,186 50		
For commutation of forage for officers' horses.....	283,414 00		
For payments in lieu of clothing for officers' servants.....	71,630 00		
For pay of volunteers, under acts of twenty-second and twenty-fifth July, eighteen hundred and sixty-one.....	226,283,282 00		
For subsistence and kind for regulars and volunteers.....	78,386,640 80		
For regular supplies of the quartermaster's department, consisting of fuel for the officers, enlisted men, guard, hospitals, storehouses, and offices; of forage in kind for the horses, mules, and oxen of the quartermaster's department at the several posts and stations, and with the armies in the field; for the horses of the several regiments of cavalry, batteries of artillery, and such companies of infantry as may be mounted, and for the authorized number of officers' horses when serving in the field and at the outposts, including bedding for the animals; of straw for soldiers' bedding, and of stationery, including blank books for the quartermaster's department, certificates for discharged soldiers, blank forms for the pay and quartermaster's departments; and for the printing of division and department orders and reports.....	36,912,000 00		
Amount carried forward.....	352,646,471 30		304,921,449 61

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
For the incidental expenses of the quartermaster's department, consisting of postage on letters and packets received and sent by officers of the army on public service; expenses of courts-martial and courts of inquiry, including the additional compensation of judge advocates, recorders, members, and witnesses while on that service, under the act of March sixteenth, eighteen hundred and two; extra pay to soldiers employed, under the direction of the quartermaster's department, in the erection of barracks, quarters, storehouses, and hospitals, in the construction of roads and on other constant labor, for periods of not less than ten days, under the acts of March second, eighteen hundred and nineteen, and August fourth, eighteen hundred and fifty-four, including those employed as clerks at division and department headquarters; expenses of expresses to and from the frontier posts and armies in the field; of escorts to paymasters and other disbursing officers, and to trains where military escorts cannot be furnished; expenses of the interment of officers killed in action, or who die when on duty in the field, or at posts on the frontiers, or at other posts and places where ordered by the Secretary of War, and of non-commissioned officers and soldiers; authorized office furniture; hire of laborers in the quartermaster's department, including the hire of interpreters, spies, and guides for the army; compensation of clerks of the officers of the quartermaster's department; compensation of forage and wagon masters, authorized by the act of July fifth, eighteen hundred and thirty-eight; for the apprehension of deserters and the expenses incident to their pursuit; and for the following expenditures required for the several regiments of cavalry, the batteries of light artillery, and such companies of infantry as may be mounted, viz: the purchase of travelling forges, blacksmiths' and shoeing tools, horse and mule shoes and nails, iron and steel for shoeing, hire of veterinary surgeons, medicines for horses and mules, picket ropes, and for shoeing the horses of the corps named; also, generally, the proper and authorized expenses for the movements and operations of an army not expressly assigned to any other department.	\$352, 646, 471 30 20, 836, 750 00 5, 400, 000 00 1, 291, 600 00	\$304, 921, 449 61

the purchase and hire of horses, mules, oxen, and harness, and the purchase and repair of wagons, carts, and drays, and of ships and other sea-going vessels and boats required for the transportation of supplies and for garrison purposes; for drayage and cartage at the several posts; hire of teamsters; transportation of funds for the pay and other disbursing departments; the expenses of sailing public transports on the various rivers, the Gulf of Mexico, and the Atlantic and Pacific; and for procuring water at such posts as, from their situation, require that it be brought from a distance; and for clearing roads, and removing obstructions from roads, harbors, and rivers, to the extent which may be required for the actual operations of the troops in the field-----	40,000,000 00	
For hire or commutation of quarters for officers on military duty; hire of quarters for troops; of storehouses for the safe-keeping of military stores; of grounds for summer cantonments; for the construction of temporary huts, hospitals, and stables; and for repairing public buildings at established posts-----	4,234,000 00	
For heating and cooking stoves-----	90,000 00	
For maintenance of gunboat fleet proper-----	2,160,000 00	
For maintenance of steam rams-----	180,000 00	
For contingencies of the army-----	500,000 00	
For clothing for the army, camp and garrison equipage, and for expenses of offices and arsenals-----	39,322,513 25	
For constructing and extending the telegraph for military purposes, and for expenses in operating the same--	500,000 00	
For the medical and hospital department, including pay of private physicians, purchase and repair of surgical instruments, purchase of extra hospital bedding, clothing, ice, pay of male citizens as hospital attendants; the maintenance of sick and wounded soldiers placed in private houses or hospitals; and other necessary comforts for the sick and convalescing in the various military hospitals-----	5,705,984 00	
For contingent expenses of the adjutant general's department at department headquarters-----	2,000 00	
For supplies, transportation, and care of prisoners of war-----	3,373,728 00	
For armament of fortifications-----	1,062,500 00	
For the current expenses of the ordnance service-----	732,600 00	
For ordnance, ordnance stores, and supplies, including horse equipments for all mounted troops-----	7,380,000 00	
For the manufacture of arms at the national armory-----	1,800,000 00	
For repairs, and improvements and new machinery at the national armory at Springfield, Massachusetts-----	150,000 00	
For the purchase of gunpowder and lead-----	1,100,000 00	
For additions to and extension of shop room, machinery, tools, and fixtures at arsenals-----	500,000 00	
For the purchase and manufacture of arms for volunteers and regulars, and ordnance and ordnance stores--	13,000,000 00	
For surveys of military defences-----	150,000 00	
For purchase and repair of instruments-----	10,000 00	
For printing charts of lake surveys-----	10,000 00	
For continuing the survey of the northern and northwestern lakes, including Lake Superior-----	105,000 00	
For completion of Fort Clinch, Amelia island, Florida-----	150,000 00	
For secret service fund, and to reimburse the contingent fund of the army-----	50,000 00	
Amount carried forward-----	502,443,146 55	304,921,449 61

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
For pay of bounty to volunteers, and to the widows and legal heirs of such as may die or be killed in the service of the United States, authorized by the fifth and sixth sections of an act entitled "An act to authorize the employment of volunteers to aid in enforcing the laws and protecting public property," approved July twenty-second, eighteen hundred and sixty-one-----	\$502,443,146 55	304,921,449 61
For collecting, organizing, and drilling volunteers, in addition to any sums heretofore appropriated for that purpose-----	20,000,000 00	
For providing for the comfort of discharged soldiers who may arrive in the principal cities of the United States so disabled by disease, or by wounds received in the service, as to be unable to proceed to their homes, and for forwarding destitute soldiers to their homes; to be applied and expended under the direction of the President of the United States-----	5,000,000 00	
For enlarging, repairing, and furnishing the northwest executive building-----	2,000,000 00	
For grading and improving that part of Judiciary square, in the city of Washington, upon which the general hospital of the United States is located; to be expended under the direction of the surgeon general-----	20,000 00	
For salaries of one clerk of class one and one clerk of class two in the office of the Surgeon General; twenty clerks of class one and twenty clerks of class two in the office of the Paymaster General; four clerks of class two, six clerks of class one, and ten other clerks, at a monthly compensation of sixty dollars each, in the office of the Adjutant General-----	4,000 00	
For payment of one-fourth of the bounty authorized by section five of the act "to authorize the employment of volunteers to aid in enforcing the laws and protecting public property," approved July twenty-second, eighteen hundred and sixty-one; and section five of the act "to increase the present military establishment of the United States," approved July twenty-nine, eighteen hundred and sixty-one, immediately after enlistment to every soldier of the regular and volunteer forces hereafter enlisted during the continuance of the existing war-----	51,200 00	
For service of the year ending the thirtieth of June, eighteen hundred and sixty-two:	7,500,000 00	
For the construction and maintenance of the gun boat fleet proper-----	400,000 00	
For purchasing, construction, and maintenance of steam rams-----	400,000 00	
For pay of private physicians, purchase and repair of surgical instruments, purchase of extra hospital bedding, clothing, ice, and other necessary comforts for the sick and convalescing in the various hospitals-----	125,000 00	
For the contingent expenses of the Paymaster General's office-----	1,000 00	
		537,944,346 55

By the act making appropriations for the current and contingent expenses of the Indian department, and for fulfilling treaty stipulations with various Indian tribes, for the year ending June thirtieth, eighteen hundred and sixty-three.

For the current and contingent expenses of the Indian department, namely:

For pay of superintendents of Indian affairs and of the several Indian agents, per acts of fifth June, eighteen hundred and fifty; twenty-seventh February, eighteen hundred and fifty-one; thirty-first July, eighteen hundred and fifty-four; third March, eighteen hundred and fifty-five; eighteenth August, eighteen hundred and fifty-six; third March, eighteen hundred and fifty-seven; nineteenth June, eighteen hundred and sixty; twenty-fifth June, eighteen hundred and sixty; eighth and thirteenth February, eighteen hundred and sixty-one; and per fifteenth article of treaty of nineteenth April, eighteen hundred and fifty-eight, with the Yanctons -----

For the pay of the several Indian subagents, per act of thirty-first July, eighteen hundred and fifty-four -----

For the pay of clerk to superintendent at St. Louis, Missouri, per act of twenty-seventh June, eighteen hundred and forty-six -----

For the pay of interpreters, per acts of thirtieth June, eighteen hundred and thirty-four; twenty-seventh February, eighteen hundred and fifty-one; and eighteenth August, eighteen hundred and fifty-six -----

For pay of twenty laborers for reservations in California -----

For presents to Indians -----

For provisions for Indians -----

For buildings at agencies and repairs thereof -----

For contingencies of the Indian department -----

For the employment of temporary clerks by superintendents of Indian affairs on such occasions and for such periods of time as the Secretary of the Interior may deem necessary to the public service -----

For fulfilling treaty stipulations with the various Indian tribes:

Blackfoot nation.—For seventh of ten instalments as annuity, to be expended in the purchase of such goods, provisions, and other useful articles as the President, at his discretion, may from time to time determine, per ninth article of the treaty of seventeenth October, eighteen hundred and fifty-five -----
For seventh of ten instalments as annuity, to be expended in establishing and instructing them in agricultural and mechanical pursuits, and in educating their children, and promoting civilization and christianity, at the discretion of the President, per tenth article of the treaty of seventeenth October, eighteen hundred and fifty-five -----

Chasta, Scoton, and Umpqua Indians.—For eighth of fifteen instalments of annuity, to be expended as directed by the President, per third article treaty eighteenth November, eighteen hundred and fifty-four -----
For eighth of fifteen instalments for the pay of a farmer, per fifth article treaty eighteenth November, eighteen hundred and fifty-four -----

For eighth of ten instalments for pay of physician, medicines, and expense of care of the sick, per fifth article treaty eighteenth November, eighteen hundred and fifty-four -----

91,250 00

6,000 00

1,200 00

24,900 00

12,000 00

5,000 00

11,800 00

10,000 00

36,500 00

5,000 00

20,000 00

15,000 00

2,000 00

1,000 00

1,500 00

243,150 00

842,865,796 16

Amount carried forward -----

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$243,150 00	\$842,865,796 16
For eighth of fifteen instalments for pay of teachers and purchase of books and stationery, per fifth article treaty eighteenth November, eighteen hundred and fifty-four.....	1,200 00	
<i>Chippewas of Lake Superior</i> —For two-thirds of twenty-five instalments in money, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	8,333 33	
For two-thirds of twenty-five instalments for the pay of two carpenters, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	800 00	
For two-thirds of twenty-five instalments in goods, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	7,000 00	
For two-thirds of twenty-five instalments for the support of schools, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	1,333 33	
For two-thirds of twenty-five instalments for the pay of two farmers, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	666 67	
For two-thirds of twenty-five instalments for the purchase of provisions and tobacco, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	1,333 33	
For eighth of twenty instalments in corn, goods, household furniture and cooking utensils, agricultural implements and cattle, carpenter's and other tools, and building materials, and for moral and educational purposes, per fourth article treaty thirtieth September, eighteen hundred and fifty-four.....	19,000 00	
For eighth of twenty instalments for six smiths and assistants, per second and fifth articles treaty thirtieth September, eighteen hundred and fifty-four.....	5,040 00	
For eighth of twenty instalments for the support of six smiths' shops, per second and fifth articles treaty thirtieth September, eighteen hundred and fifty-four.....	1,320 00	
For sixth of twenty instalments for the seventh smith and assistant and support of shop, per second and fifth articles treaty thirtieth September, eighteen hundred and fifty-four.....	1,060 00	
For support of a smith, assistant, and shop for the Bois Forte band during the pleasure of the President, per twelfth article treaty thirtieth September, eighteen hundred and fifty-four.....	1,060 00	

For support of two farmers for the Bois Forte band during the pleasure of the President, per twelfth article treaty thirtieth September, eighteen hundred and fifty-four.....	1,200 00	
<i>Chippewas of the Mississippi</i> .—For one-third of twenty-five instalments in money, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	4,166 67	
For one-third of twenty-five instalments for the pay of two carpenters, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	400 00	
For one-third of twenty-five instalments in goods, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	3,500 00	
For one-third of twenty-five instalments for the support of schools, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	666 67	
For one-third of twenty-five instalments for the purchase of provisions and tobacco, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	666 67	
For one-third of twenty-five instalments for the support of two smiths' shops, including the pay of two smiths and assistants, and furnishing iron and steel, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	666 67	
For one-third of twenty-five instalments for pay of two farmers, per fourth article treaty fourth October, eighteen hundred and forty-two, and eighth article treaty thirtieth September, eighteen hundred and fifty-four.....	333 33	
For eighth of twenty instalments of annuity in money, per third article treaty twenty-second February, eighteen hundred and fifty-five.....	20,000 00	
<i>Chippewas, Pillager, and Lake Winnibagoshish bands</i> .—For eighth of thirty instalments of annuity in money, per third article treaty twenty-second February, eighteen hundred and fifty-five.....	10,666 66	
For eighth of thirty instalments of annuity in goods, per third article treaty twenty-second February, eighteen hundred and fifty-five.....	8,000 00	
For eighth of thirty instalments for purposes of utility, per third article treaty twenty-second February, eighteen hundred and fifty-five.....	4,000 00	
For eighth of twenty instalments for purposes of education, per third article treaty twenty-second February, eighteen hundred and fifty-five.....	3,000 00	
For eighth of fifteen instalments for the support of two smiths and smiths' shops, per third article treaty twenty-second February, eighteen hundred and fifty-five.....	2,120 00	
For pay of an engineer to grist and saw mill at Leech lake.....	600 00	
Amount carried forward.....	351,283 33	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
<i>Chippewas of Saginaw, Swan Creek, and Black River.</i> —For seventh of ten equal instalments in coin, to be distributed <i>per capita</i> , in the usual manner of paying annuities, per second article of the treaty of second August, eighteen hundred and fifty-five.....	\$351,283 33	\$842,865,796 16
For seventh of ten instalments for the support of one blacksmith shop, per second article of the treaty of second August, eighteen hundred and fifty-five.....	10,000 00	
<i>Chippewas, Menomonees, Winnebagoes, and New York Indians.</i> —For education, during the pleasure of Congress, per fifth article treaty eleventh August, eighteen hundred and twenty-seven.....	1,240 00	
<i>Chickasaws.</i> —For permanent annuity in goods, per act of twenty-fifth February, seventeen hundred and ninety-nine.....	1,500 00	
<i>Choctaws.</i> —For permanent annuity, per second article treaty sixteenth November, eighteen hundred and five, and thirteenth article treaty twenty-second June, eighteen hundred and fifty-five.....	3,000 00	
For permanent annuity for support of light-horsemen, per thirteenth article treaty eighteenth October, eighteen hundred and twenty, and thirteenth article treaty twenty-second June, eighteen hundred and fifty-five.....	3,000 00	
For permanent provision for education, per second article treaty twentieth January, eighteen hundred and twenty-five, and thirteenth article treaty twenty-second June, eighteen hundred and fifty-five.....	600 00	
For permanent provision for blacksmith, per sixth article treaty eighteenth October, eighteen hundred and twenty, and thirteenth article treaty twenty-second June, eighteen hundred and fifty-five.....	6,000 00	
For permanent provision for iron and steel, per ninth article treaty twentieth January, eighteen hundred and twenty-five, and thirteenth article of treaty twenty-second June, eighteen hundred and fifty-five.....	600 00	
For interest on five hundred thousand dollars at five per centum for education, support of the government, and other beneficial purposes, to be applied under the direction of the general council of the Choctaws, in conformity with the provisions contained in the tenth and thirteenth articles of the treaty of twenty-second June, eighteen hundred and fifty-five.....	320 00	
<i>Comanches, Kiowas, and Apaches, of Arkansas river.</i> —For ninth of ten instalments for the purchase of goods, provisions, and agricultural implements, per sixth article treaty twenty-seventh July, eighteen hundred and fifty-three.....	25,000 00	
For expenses of transportation of the ninth of ten instalments of goods, provisions, and agricultural implements, per sixth article treaty twenty-seventh July, eighteen hundred and fifty-three.....	18,000 00	
<i>Creeks.</i> —For permanent annuity in money, per fourth article treaty seventh August, seventeen hundred and ninety, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	7,000 00	
	1,500 00	

For permanent annuity in money, per second article treaty sixteenth June, eighteen hundred and two, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	3,000 00
For permanent annuity in money, per fourth article treaty twenty-fourth January, eighteen hundred and twenty-six, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	20,000 00
For permanent provision for blacksmith and assistant, and for shop and tools, per eighth article treaty twenty-fourth January, eighteen hundred and twenty-six, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	840 00
For permanent provision for iron and steel for shop, per eighth article treaty twenty-fourth January, eighteen hundred and twenty-six, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	270 00
For permanent provision for the pay of a wheelwright, per eighth article treaty twenty-fourth January, eighteen hundred and twenty-six, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	600 00
For blacksmith and assistant and shop and tools, during the pleasure of the President, per fifth article treaty fourteenth February, eighteen hundred and thirty-three, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	840 00
For iron and steel for shop, during the pleasure of the President, per fifth article treaty fourteenth February, eighteen hundred and thirty-three, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	270 00
For wagon maker, during the pleasure of the President, per fifth article treaty fourteenth February, eighteen hundred and thirty-three, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	600 00
For assistance in agricultural operations, during the pleasure of the President, per eighth article treaty twenty-fourth January, eighteen hundred and twenty-six, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	2,000 00
For education, during the pleasure of the President, per fifth article treaty fourteenth February, eighteen hundred and thirty-three, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	1,000 00
For the sixth of seven additional instalments for two blacksmiths, assistants, shops and tools, per thirtieth article treaty twenty-fourth March, eighteen hundred and thirty-two, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	1,680 00
For the sixth of seven additional instalments for iron and steel for shops, per thirteenth article treaty twenty-fourth March, eighteen hundred and thirty-two, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	540 00
For thirty-second of thirty-three instalments for education, per fourth article treaty fourth January, eighteen hundred and forty-five, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	3,000 00
For nineteenth of twenty instalments for education, per fourth article treaty fourth January, eighteen hundred and forty-five, and fifth article treaty seventh August, eighteen hundred and fifty-six.....	3,000 00
For five per centum interest on two hundred thousand dollars for purposes of education, per sixth article treaty seventh August, eighteen hundred and fifty-six.....	10,000 00
<i>Delawares.</i> —For life annuity to chief, per private article to supplemental treaty twenty-fourth September, eighteen hundred and twenty-nine, to treaty of third October, eighteen hundred and eighteen.....	100 00
Amount carried forward	476,783 33
	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----	\$476,783 33	\$842,865,796 16
For interest on forty-six thousand and eighty dollars, at five per centum, being the value of thirty-six sections of land, set apart by treaty of eighteen hundred and twenty-nine for education, per resolution of the Senate of nineteenth January, eighteen hundred and thirty-eight, and fifth article treaty sixth May, eighteen hundred and fifty-four-----	2,304 00	
<i>Iowas</i> .—For interest in lieu of investment on fifty-seven thousand five hundred dollars, balance of one hundred and fifty-seven thousand five hundred dollars to the first July, eighteen hundred and sixty-three, at five per centum for education or other beneficial purposes, under the direction of the President, per second article treaty nineteenth October, eighteen hundred and thirty-eight, and ninth article treaty seventeenth May, eighteen hundred and fifty-four-----	2,875 00	
<i>Kansas</i> .—For interest in lieu of investment on two hundred thousand dollars, at five per centum, per second article treaty fourteenth of January, eighteen hundred and forty-six-----	10,000 00	
<i>Kickapoos</i> .—For ninth instalment of interest, at five per centum on one hundred thousand dollars for education, per second article treaty eighteenth May, eighteen hundred and fifty-four-----	5,000 00	
For ninth instalment on two hundred thousand dollars, to be paid in eighteen hundred and sixty-two, per second article treaty eighteenth May, eighteen hundred and fifty-four-----	9,000 00	
<i>Menomonees</i> .—For seventh of twelve instalments for continuing and keeping up a blacksmith shop, and providing the usual quantity of iron and steel, per fourth article treaty eighteenth October, eighteen hundred and forty-eight, and third article treaty twelfth May, eighteen hundred and fifty-four-----	916 66	
For seventh of ten instalments of annuity upon two hundred thousand dollars, balance of three hundred and fifty thousand dollars for cession of lands, per fourth article treaty eighteenth October, eighteen hundred and forty-eight, and third article treaty twelfth May, eighteen hundred and fifty-four-----	20,000 00	
For seventh of fifteen instalments for pay of miller, per third article treaty twelfth May, eighteen hundred and fifty-four-----	600 00	
<i>Miamies of Kansas</i> .—For permanent provision for blacksmith and assistant, and iron and steel for shop, per fifth article treaty sixth October, eighteen hundred and eighty, and fourth article treaty fifth June, eighteen hundred and fifty-four-----	940 00	
For permanent provision for miller, in lieu of gunsmith, per fifth article treaty sixth October, eighteen hundred and eighty, fifth article treaty twenty-third October, eighteen hundred and thirty-four, and fourth article treaty fifth June, eighteen hundred and fifty-four-----	600 00	
For interest on fifty thousand dollars, at five per centum, for educational purposes, per third article treaty fifth June, eighteen hundred and fifty-four-----	2,500 00	

For third of twenty instalments upon two hundred thousand dollars, per third article treaty fifth June, eighteen hundred and fifty-four.....	7,500 00	
<i>Miamies of Indiana</i> .—For interest on two hundred and twenty-one thousand two hundred and fifty-seven dollars and eighty-six cents, uninvested, at five per centum, for Miami Indians, of Indiana, per Senate's amendment to fourth article treaty fifth June, eighteen hundred and fifty-four.....	11,062 89	
<i>Miamies, Eel river</i> .—For permanent annuity in goods or otherwise, per fourth article treaty third August, seventeen hundred and ninety-five.....	500 00	
For permanent annuity in goods or otherwise, per third article treaty twenty-first August, eighteen hundred and five.....	250 00	
For permanent annuity in goods or otherwise, per third and separate article to treaty thirtieth September, eighteen hundred and nine.....	350 00	
<i>Nisqually, Puyallup, and other tribes of Indians</i> .—For eighth instalment in part payment for relinquishment of title to lands, to be applied to beneficial objects, per fourth article treaty twenty-sixth December, eighteen hundred and fifty-four.....	1,500 00	
For eighth of twenty instalments for pay of instructor, smith, physician, carpenter, farmer, and assistant, if necessary, per tenth article treaty twenty-sixth December, eighteen hundred and fifty-four.....	6,700 00	
<i>Omahas</i> .—For the fifth of ten instalments of this amount, being second of the series, in money or otherwise, per fourth article treaty sixteenth March, eighteen hundred and fifty-four.....	30,000 00	
For eighth of ten instalments for support of a miller, per eighth article treaty sixteenth March, eighteen hundred and fifty-four.....	600 00	
For eighth of ten instalments for support of blacksmith and assistant, and iron and steel for shop, per eighth article treaty sixteenth March, eighteen hundred and fifty-four.....	940 00	
For eighth of ten instalments for support of farmer, per eighth article treaty sixteenth March, eighteen hundred and fifty-four.....	600 00	
For keeping in repair the grist and saw mill provided for by the eighth article of the treaty of sixteenth March, eighteen hundred and fifty-four.....	300 00	
For supplying the smith's shop with tools, and keeping the same in repair, per eighth article of the treaty of sixteenth March, eighteen hundred and fifty-four.....	300 00	
For an engineer.....	1,200 00	
<i>Osages</i> .—For interest on sixty-nine thousand one hundred and twenty dollars, at five per centum, being the value of fifty-four sections of land set apart second June, eighteen hundred and twenty-five, for educational purposes, per Senate resolution nineteenth January, eighteen hundred and thirty-eight.....	3,456 00	
<i>Ottoes and Missourias</i> .—Fifth of ten instalments, being the second series in money or otherwise, per fourth article treaty of fifteenth March, eighteen hundred and fifty-four.....	13,000 00	
For eighth of ten instalments for pay of militia, per seventh article treaty fifteenth March, eighteen hundred and fifty-four.....	600 00	
Amount carried forward.....	610,377 88	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
For eighth of ten instalments for blacksmith and assistant, and iron and steel for shop, per seventh article treaty fifteenth March, eighteen hundred and fifty-four-----	\$610, 377 88	\$842, 865, 796 16
For eighth of ten instalments for farmer, per seventh article treaty fifteenth March, eighteen hundred and fifty-four-----	940 00	
For keeping in repair the grist and saw mill provided for by the seventh article of the treaty of fifteenth March, eighteen hundred and fifty-four-----	600 00	
For supplying the smith's shop with tools, and keeping the same in repair, per seventh article of the treaty fifteenth March, eighteen hundred and fifty-four-----	300 00	
For an engineer-----	300 00	
<i>Ottawas and Chippewas of Michigan.</i> —For seventh of ten equal annual instalments for educational purposes, to be expended under the direction of the President, according to the wishes of the Indians, so far as may be reasonable and just, per second article of the treaty of thirty-first July, eighteen hundred and fifty-five-----	1, 200 00	
For seventh of ten instalments for the support of four blacksmith shops, per second article of the treaty of thirty-first July, eighteen hundred and fifty-five-----	8, 000 00	
For seventh of ten instalments of principal, payable annually for ten years, to be distributed per capita, in the usual manner of paying annuities, per second article of the treaty thirty-first July, eighteen hundred and fifty-five-----	4, 240 00	
For interest on two hundred and thirty-six thousand dollars, unpaid part of the principal sum of three hundred and six thousand dollars, for one year, at five per centum per annum, to be distributed per capita, in the usual manner of paying annuities, per second article of the treaty of thirty-first July, eighteen hundred and fifty-five-----	10, 000 00	
For seventh of ten equal annual instalments on thirty-five thousand dollars, in lieu of former treaty stipulations, to be paid per capita to the Grand River Ottawas, per second article of the treaty of thirty-first July, eighteen hundred and fifty-five-----	11, 800 00	
<i>Ottawas of Kansas</i> —For their proportion of the permanent annuities in money, goods, or otherwise, payable under the fourth article of the treaty of third August, seventeen hundred and ninety-five, second article of the treaty of seventeenth November, eighteen hundred and seven, fourth article of the treaty of the treaty of seventeenth September, eighteen hundred and eighteen, and fourth article of the treaty of twenty-ninth August, eighteen hundred and twenty-one-----	3, 500 00	
<i>Pawnees</i> —For last of five instalments in goods and such articles as may be necessary for them, per second article treaty twenty-fourth September, eighteen hundred and fifty-seven-----	2, 600 00	
	40, 000 00	

For support of two manual labor schools annually, during the pleasure of the President, per third article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	10,000 00
For pay of two teachers, under the direction of the President, per third article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	1,200 00
For purchase of iron and steel, and other necessities for the shop, during the pleasure of the President, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	500 00
For pay of two blacksmiths, one of whom to be a gunsmith and tinsmith, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	1,290 00
For compensation of two strikers or apprentices in shop, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	480 00
For fifth of ten instalments for farming utensils and stock during the pleasure of the President, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	1,200 00
For pay of farmer, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	600 00
For fourth of ten instalments for pay of miller, at the discretion of the President, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	600 00
For fourth of ten instalments for pay of an engineer, at the discretion of the President, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	1,200 00
For compensation to apprentices to assist in working the mill, per fourth article treaty twenty-fourth September, eighteen hundred and fifty-seven.....	500 00
<i>Pottawatamies</i> .—For permanent annuity in silver, per fourth article treaty third August, seventeen hundred and ninety-five.....	1,000 00
For permanent annuity in silver, per third article treaty thirtieth September, eighteen hundred and nine.....	500 00
For permanent annuity in silver, per third article treaty second October, eighteen hundred and eighteen.....	2,500 00
For permanent annuity in money, per second article treaty twentieth September, eighteen hundred and twenty-eight.....	2,000 00
For permanent annuity in specie, per second article treaty twenty-ninth July, eighteen hundred and twenty-nine.....	16,000 00
For life annuity to chief, per third article treaty twentieth October, eighteen hundred and thirty-two.....	200 00
For life annuity to chiefs, per third article treaty twenty-sixth September, eighteen hundred and thirty-three.....	700 00
For education during the pleasure of Congress, per third article treaty sixteenth October, eighteen hundred and twenty-six, second article treaty twentieth September, eighteen hundred and twenty-eight, and fourth article treaty twenty-seventh October, eighteen hundred and thirty-two.....	5,000 00
For permanent provision for the payment of money in lieu of tobacco, iron, and steel, per second article treaty twentieth September, eighteen hundred and twenty-eight, and tenth article treaty of the fifth and seventeenth June, eighteen hundred and forty-six.....	300 00
For permanent provision for three blacksmiths and assistants, per third article treaty sixteenth October, eighteen hundred and twenty-six, second article treaty twentieth September, eighteen hundred and twenty-eight, and second article treaty twenty-ninth July, eighteen hundred and twenty-nine.....	2,160 00
Amount carried forward.....	741,787 88
	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
For permanent provision for iron and steel for shops, per third article treaty sixteenth October, eighteen hundred and twenty-six, second article treaty twentieth September, eighteen hundred and twenty-eight, and second article treaty twenty-ninth July, eighteen hundred and twenty-nine.....	\$741,787 88	842,865,796 16
For permanent provision for fifty barrels of salt, per second article treaty twenty-ninth July, eighteen hundred and twenty-nine.....	660 00	
For interest on six hundred and forty three thousand dollars, at five per centum, per seventh article of the treaty of the fifth and seventeenth June, eighteen hundred and forty-six.....	250 00	
<i>Pottawatomies of Huron</i> .—For permanent annuity in money or otherwise, per second article treaty seventeenth November, eighteen hundred and seven.....	32,150 00	
<i>Quapaws</i> .—For education during the pleasure of the President, per third article treaty thirtieth May, eighteen hundred and thirty-three.....	400 00	
For blacksmith and assistant, shop and tools, and iron and steel for shop, during the pleasure of the President, per third article treaty thirteenth May, eighteen hundred and thirty-three.....	1,000 00	
For farmer during the pleasure of the President, per third article treaty thirteenth May, eighteen hundred and thirty-three.....	1,060 00	
<i>Rogue Rivers</i> .—For ninth of sixteen instalments in blankets, clothing, farming utensils, and stock, per third article treaty tenth September, eighteen hundred and fifty-three.....	600 00	
<i>Sacs and Foxes of Mississippi</i> .—For permanent annuity in goods or otherwise, per third article treaty third November, eighteen hundred and four.....	2,000 00	
For interest on two hundred thousand dollars, at five per centum, per second article treaty twenty-first October, eighteen hundred and thirty-seven.....	1,000 00	
For interest on eight hundred thousand dollars, at five per centum, per second article treaty eleventh October, eighteen hundred and forty-two.....	10,000 00	
<i>Sacs and Foxes of Missouri</i> .—For interest on one hundred and fifty-seven thousand four hundred dollars, at five per centum, under the direction of the President, per second article treaty twenty-first October, eighteen hundred and thirty-seven.....	40,000 00	
<i>Seminoles</i> .—For the sixth of ten instalments for the support of schools, per eighth article treaty seventh August, eighteen hundred and fifty-six.....	7,870 00	
For the sixth of ten instalments for agricultural assistance, per eighth article treaty seventh August, eighteen hundred and fifty-six.....	3,000 00	
	2,000 00	

For the sixth of ten instalments for the support of smiths and smiths' shops, per eighth article treaty seventh August, eighteen hundred and fifty-six.....	2, 200 00
For five per centum interest on two hundred and fifty thousand dollars, to be paid as annuity, per eighth article treaty seventh August, eighteen hundred and fifty-six.....	12, 500 00
For interest on two hundred and fifty thousand dollars, at five per centum, to be paid as annuity, they having joined their brethren west, per eighth article treaty seventh August, eighteen hundred and fifty-six.....	12, 500 00
<i>Senecas</i> .—For permanent annuity in specie, per fourth article treaty twenty-ninth September, eighteen hundred and seventeen.....	500 00
For permanent annuity in specie, per fourth article treaty seventeenth September, eighteen hundred and eighteen.....	500 00
For blacksmith and assistant, shop and tools, and iron and steel, during the pleasure of the President, per fourth article treaty twenty-eighth February, eighteen hundred and thirty-one.....	1, 060 00
For miller, during the pleasure of the President, per fourth article treaty twenty eighth February, eighteen hundred and thirty-one.....	600 00
<i>Senecas of New York</i> .—For permanent annuity in lieu of interest on stock, per act of nineteenth February, eighteen hundred and thirty-one.....	6, 000 00
For interest in lieu of investment on seventy-five thousand dollars, at five per centum, per act of twenty-seventh June, eighteen hundred and forty-six.....	3, 750 00
For interest at five per centum on forty-three thousand and fifty dollars, transferred from Ontario bank to the United States treasury, per act of twenty-seventh June, eighteen hundred and forty-six.....	2, 152 50
<i>Senecas and Shawnees</i> .—For permanent annuity in specie, per fourth article treaty seventeenth September, eighteen hundred and eighteen.....	1, 000 00
For blacksmith and assistant, shop and tools, and iron and steel for shop, during the pleasure of the President, per fourth article treaty twentieth July, eighteen hundred and thirty-one.....	1, 060 00
<i>Shawnees</i> .—For permanent annuity for educational purposes, per fourth article treaty third August, seventeen hundred and ninety-five, and third article treaty tenth May, eighteen hundred and fifty-four.....	1, 000 00
For ninth instalment of interest, at five per centum, on forty thousand dollars for education, per third article treaty tenth May, eighteen hundred and fifty-four.....	2, 000 00
For permanent annuity for educational purposes, per fourth article treaty twenty-ninth September, eighteen hundred and seventeen, and third article treaty tenth May, eighteen hundred and fifty-four.....	2, 000 00
<i>Six Nations of New York</i> .—For permanent annuity in clothing and other useful articles, per sixth article treaty eleventh November, seventeen hundred and ninety-four.....	4, 500 00
<i>Sioux of Mississippi</i> .—For interest on three hundred thousand dollars, at five per centum, per second article treaty twenty-ninth September, eighteen hundred and thirty-seven.....	15, 000 00
For twelfth of fifty instalments of interest, at five per centum, on one million three hundred and sixty thousand dollars, per fourth article treaty twenty-third July, eighteen hundred and fifty-one.....	68, 000 00
Amount carried forward.....	980, 100 38
	842, 865, 796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$980, 100 38	\$842, 865, 796 16
For twelfth of fifty instalments of interest, at five per centum, on one hundred and twelve thousand dollars, being the amount in lieu of the reservations set apart in the third article of Senate's amendment of twenty-third June, eighteen hundred and fifty-two, to treaty twenty-third July, eighteen hundred and fifty-one....	5, 600 00	
For twelfth of fifty instalments of interest, at five per centum, on one million one hundred and sixty thousand dollars, per fourth article treaty fifth August, eighteen hundred and fifty-one.....	58, 000 00	
For twelfth of fifty instalments of interest, at five per centum, on sixty-nine thousand dollars, being the amount allowed in lieu of the reservation of lands set apart by the third article of Senate's amendment of twenty-third June, eighteen hundred and fifty-two, to treaty fifth August, eighteen hundred and fifty-one....	3, 450 00	
<i>Treaty of Fort Laramie.</i> —For second of five instalments, at the discretion of the President, in provisions and merchandise, for payment of annuities, and transportation of the same to certain tribes of Indians.....	70, 000 00	
<i>Umpquas, (Cow Creek Band.)</i> —For ninth of twenty instalments in blankets, clothing, provisions, and stock, per third article treaty nineteenth September, eighteen hundred and fifty-three.....	550 00	
<i>Umpquas and Calapoosias of Umpqua Valley, Oregon.</i> —For third of five instalments, of the second series, of annuity for beneficial objects, to be expended as directed by the President, per third article treaty nineteenth September, eighteen hundred and fifty-three.....	2, 300 00	
For eighth of ten instalments for the pay of a blacksmith, and furnishing shop, per sixth article treaty twenty-ninth September, eighteen hundred and fifty-four.....	1, 500 00	
For eighth of fifteen instalments for the pay of a physician and purchase of medicine, per sixth article treaty twenty-ninth November, eighteen hundred and fifty-four.....	2, 000 00	
For eighth of ten instalments for the pay of a farmer, per sixth article treaty twenty-ninth November, eighteen hundred and fifty-four.....	1, 000 00	
For eighth of twenty instalments for the pay of a teacher and purchase of books and stationery, per sixth article treaty twenty-ninth November, eighteen hundred and fifty-four.....	1, 450 00	
<i>Winnebagoes.</i> —For interest on one million one hundred thousand dollars, at five per centum, per fourth article treaty first November, eighteen hundred and thirty-seven.....	55, 000 00	
For sixteenth of thirty instalments of interest on eighty-five thousand dollars, at five per centum, per fourth article treaty thirtieth October, eighteen hundred and forty-six.....	4. 250 00	
<i>Yancton Tribe of Sioux.</i> —For fourth of ten instalments to be paid to them or expended for their benefit, commencing with the year in which they shall remove to and settle and reside upon their reservation, per fourth article treaty nineteenth April, eighteen hundred and fifty-eight.....	65, 000 00	

<i>Calapooias, Molalla, and Clackamas Indians of Willamette Valley.</i> —For third of five instalments of annuity for beneficial objects, per second article treaty twenty-second January, eighteen hundred and fifty-five -----	8,000 00	
<i>Poncas.</i> —For fourth of five instalments to be paid to them or expended for their benefit, commencing with the year in which they shall remove to and settle upon the tract reserved for their future homes, per second article treaty twelfth March, eighteen hundred and fifty-eight -----	12,000 00	
For fourth of ten instalments for the establishment and maintenance of one or more manual labor schools, under the direction of the President, per second article treaty twelfth March, eighteen hundred and fifty-eight -----	5,000 00	
For fourth of ten instalments, or during the pleasure of the President, to be expended in furnishing said Indians with such aid and assistance in agricultural and mechanical pursuits, including the working of the mill provided for in the first part of this article, as the Secretary of the Interior may consider advantageous and necessary for them, per second article treaty twelfth March, eighteen hundred and fifty-eight -----	7,500 00	
<i>Dacotah and other allied tribes in Washington Territory.</i> —For third instalment on one hundred and fifty thousand dollars, under the direction of the President, per sixth article treaty twenty-second January, eighteen hundred and fifty-five -----	12,000 00	
For third of twenty instalments for the establishment and support of an agricultural and industrial school, and to provide said school with a suitable instructor or instructors, per fourteenth article treaty twenty-second January, eighteen hundred and fifty-five -----	3,000 00	
For third of twenty instalments for the establishment and support of a smith and carpenter shop, and to furnish them with the necessary tools, per fourteenth article treaty twenty-second January, eighteen hundred and fifty-five -----	500 00	
For third of twenty instalments for the employment of a blacksmith, carpenter, farmer, and physician, who shall furnish medicine for the sick, per fourteenth article treaty twenty-second January, eighteen hundred and fifty-five -----	4,600 00	
<i>Makah tribe.</i> —For third instalment on thirty thousand dollars, under the direction of the President, per fifth article treaty thirty-first January, eighteen hundred and fifty-five -----	2,500 00	
For third of twenty instalments for the support of an agricultural and industrial school, and for pay of teachers, per eleventh article treaty thirty-first January, eighteen hundred and fifty-five -----	2,500 00	
For third of twenty instalments for support of a smith and carpenter shop, and to provide the necessary tools therefor, per eleventh article treaty thirty-first January, eighteen hundred and fifty-five -----	500 00	
For third of twenty instalments for the employment of a blacksmith, carpenter, farmer, and physician, who shall furnish medicine for the sick, per eleventh article treaty thirty-first January, eighteen hundred and fifty-five -----	4,600 00	
<i>Walla-Walla, Cayuse, and Umatilla tribes.</i> —For third of five instalments of eight thousand dollars, under the direction of the President, per second article treaty ninth June, eighteen hundred and fifty-five -----	8,000 00	
Amount carried forward -----	1,320,900 38	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$1,320,900 38	\$842,865,796 16
For third of twenty instalments for the purchase of all necessary mill fixtures and mechanical tools, medicines, and hospital stores, books and stationery for schools, and furniture for the employés, per fourth article treaty ninth June, eighteen hundred and fifty-five	3,000 00	
For third of twenty instalments for the pay and subsistence of one superintendent of farming operations, one farmer, two millers, one blacksmith, one wagon and plough maker, one carpenter and joiner, one physician, and two teachers, per fourth article treaty ninth June, eighteen hundred and fifty-five	11,200 00	
For third of twenty instalments for the pay of each of the head chiefs of the Walla-Walla, Cayuse, and Umatilla bands, the sum of five hundred dollars per annum, per fifth article treaty ninth June, eighteen hundred and fifty-five	1,500 00	
For third of twenty instalments for salary for the son of Pio-pio-mox-mox, per fifth article treaty ninth June, eighteen hundred and fifty-five	100 00	
<i>Yakima nation.</i> —For third of five instalments for beneficial objects, at the discretion of the President, per fourth article treaty ninth June, eighteen hundred and fifty-five	10,000 00	
For third of twenty instalments for the support of two schools, one of which is to be an agricultural and industrial school; keeping in repair school buildings, and for providing suitable furniture, books, and stationery, per fifth article treaty ninth June, eighteen hundred and fifty-five	500 00	
For third of twenty instalments for the employment of one superintendent of teaching and two teachers, per fifth article treaty ninth June, eighteen hundred and fifty-five	3,200 00	
For the third of twenty instalments for the employment of one superintendent of farming and two farmers, two millers, two blacksmiths, one tinner, one gunsmith, one carpenter, and one wagon and plough maker, per fifth article treaty ninth June, eighteen hundred and fifty-five	9,400 00	
For third of twenty instalments for keeping in repair saw and flouring mills, and for furnishing the necessary tools and fixtures, per fifth article treaty ninth June, eighteen hundred and fifty-five	500 00	
For third of twenty instalments for keeping in repair the hospital and providing the necessary medicines and fixtures therefor, per fifth article treaty ninth June, eighteen hundred and fifty-five	300 00	
For third of twenty instalments for the pay of a physician, per fifth article treaty ninth June, eighteen hundred and fifty-five	1,400 00	
For third of twenty instalments for keeping in repair the buildings required for the various employés, and for providing the necessary furniture therefor, per fifth article treaty ninth June, eighteen hundred and fifty-five	300 00	
For third of twenty instalments for the salary of such person as the said confederated tribes and bands of		

Indians may select to be their head chief, per fifth article treaty ninth June, eighteen hundred and fifty-five-----	500 00
<i>Nez Percé Indians.</i> —For third of five instalments for beneficial objects, at the discretion of the President, per fourth article treaty eleventh June, eighteen hundred and fifty-five-----	10,000 00
For third of twenty instalments for the support of two schools, (one of which to be an agricultural and industrial school,) keeping in repair school buildings, and for providing suitable furniture, books, and stationery, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	500 00
For third of twenty instalments for the employment of one superintendent of teaching and two teachers, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	3,200 00
For third of twenty instalments for keeping in repair blacksmith's, tinsmith's, gunsmith's, carpenter's, and wagon and plough maker's shops, and for providing necessary tools therefor, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	500 00
For third of twenty instalments for the employment of one superintendent of farming and two farmers, two millers, two blacksmiths, one tinner, one gunsmith, one carpenter, and one wagon and ploughmaker, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	9,400 00
For third of twenty instalments for keeping in repair saw and flouring mills, and for furnishing the necessary tools and fixtures therefor, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	500 00
For third of twenty instalments for keeping in repair the hospital, and providing the necessary medicines and furniture therefor, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	300 00
For third of twenty instalments for pay of a physician, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	1,400 00
For third of twenty instalments for keeping in repair the buildings for the various employes, and for providing the necessary furniture therefor, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	300 00
For third of twenty instalments for the salary of such person as the tribe may select to be their head chief, per fifth article treaty eleventh June, eighteen hundred and fifty-five-----	500 00
<i>Flatheads and other confederated tribes.</i> —For third instalment on one hundred and twenty thousand dollars for beneficial objects, at the discretion of the President, per fourth article treaty sixteenth July, eighteen hundred and fifty-five-----	6,000 00
For third of twenty instalments for the support of an agricultural and industrial school, keeping in repair the buildings, and providing suitable furniture, books, and stationery, per fifth article treaty sixteenth July, eighteen hundred and fifty-five-----	300 00
For third of twenty instalments for providing suitable instructors therefor, per fifth article treaty sixteenth July, eighteen hundred and fifty-five-----	1,800 00
For third of twenty instalments for keeping in repair blacksmith's, tin and gun smith's, carpenter's, and wagon and plough maker's shops, and providing necessary tools therefor, per fifth article treaty sixteenth July, eighteen hundred and fifty-five-----	500 00
Amount carried forward-----	1,398,000 38
	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----	\$1,398,000 38	\$842,865,796 16
For third of twenty instalments for the employment of two farmers, two millers, one blacksmith, one tinner, one gunsmith, one carpenter, and one wagon and plough maker, per fifth article treaty sixteenth July, eighteen hundred and fifty-five	7,400 00	
For third of twenty instalments for keeping in repair saw and flouring mills, and for furnishing the necessary tools and fixtures therefor, per fifth article treaty sixteenth July, eighteen hundred and fifty-five	500 00	
For third of twenty instalments for keeping in repair the hospital and providing the necessary medicines and furniture therefor, per fifth article treaty sixteenth July, eighteen hundred and fifty-five	300 00	
For third of twenty instalments for pay of a physician, per fifth article treaty sixteenth July, eighteen hundred and fifty-five	1,400 00	
For third of twenty instalments for keeping in repair the buildings required for the various employés and furnishing necessary furniture therefor, per fifth article treaty sixteenth July, eighteen hundred and fifty-five	300 00	
For third of twenty instalments for the pay of the head chiefs of the Flathead, Kootenay, and Upper Pend d'Oreilles tribes, per fifth article treaty sixteenth July, eighteen hundred and fifty-five	1,500 00	
<i>Confederated tribes and bands of Indians in Middle Oregon.</i> —For third of five instalments of eight thousand dollars for beneficial objects, at the discretion of the President, per second article treaty twenty-fifth June, eighteen hundred and fifty-five	8,000 00	
For third of fifteen instalments for pay and subsistence of one farmer, one blacksmith, and one wagon and plough maker, per fourth article treaty twenty-fifth June, eighteen hundred and fifty-five	3,500 00	
For third of twenty instalments for pay and subsistence of one physician, one sawyer, one miller, one superintendent of farming operations, and one school teacher, per fourth article treaty twenty-fifth June, eighteen hundred and fifty-five	5,600 00	
For third of twenty instalments for payment of salary to the head chief of said confederated bands, per fourth article treaty twenty-fifth June, eighteen hundred and fifty-five	500 00	
<i>Mole Indians.</i> —For third of ten instalments for keeping in repair saw and flouring mills, and for the pay of necessary employés, the benefits of which to be shared alike by all the confederated bands, per second article treaty twenty-first December, eighteen hundred and fifty-five	1,500 00	
For third of five instalments (in addition to the instalments specified in the treaty of twenty-ninth November, eighteen hundred and fifty-four, with the Umpquas and Calapooias of Umpqua valley,) for furnishing iron and steel and other materials for the smith and tin shops provided for in said treaty, and for the pay of the necessary mechanics, per second article treaty twenty-first December, eighteen hundred and fifty-five		
For third of ten instalments for the pay of a carpenter and joiner, to aid in erecting buildings and making	1,800 00	

furniture for said Indians, and to furnish tools in said service, per second article treaty twenty-first December, eighteen hundred and fifty-five.....	2,000 00
For pay of teachers to manual labor school, for all necessary materials therefor, and for the subsistence of the pupils, per second article treaty twenty-first December, eighteen hundred and fifty-five.....	3,000 00
For third of five instalments for the pay of an additional farmer, per second article treaty twenty-first December, eighteen hundred and fifty-five.....	800 00
<i>Qui-nai-elt and Quil-leh-ute Indians.</i> —For third instalment on twenty thousand dollars for beneficial objects, under the direction of the President, per fourth article treaty first July, eighteen hundred and fifty-five.....	2,000 00
For third of twenty instalments for the support of an agricultural and industrial school, and for pay of suitable instructors, per tenth article treaty first July, eighteen hundred and fifty-five.....	2,500 00
For third of twenty instalments for support of smith and carpenter shop, and to provide the necessary tools therefor, per tenth article treaty first July, eighteen hundred and fifty-five.....	500 00
For third of twenty instalments for the employment of a blacksmith, carpenter, farmer, and a physician who shall furnish medicines for the sick, per tenth article treaty first July, eighteen hundred and fifty-five.....	4,600 00
<i>S' Klallams.</i> —For third instalment on sixty thousand dollars, under the direction of the President, per fifth article treaty twenty-sixth January, eighteen hundred and fifty-five.....	5,000 00
For third of twenty instalments for the support of an agricultural and industrial school, and for pay of suitable teachers, per eleventh article treaty twenty-sixth January, eighteen hundred and fifty-five.....	2,500 00
For third of twenty instalments for the employment of a blacksmith, carpenter, farmer, and a physician who shall furnish medicines for the sick, per eleventh article treaty twenty-sixth January, eighteen hundred and fifty-five.....	4,600 00
	50,000 00
	22,825 00
	1,530,625 38
	842,865,706 16

Indian service in New Mexico.

For the general incidental expenses of the Indian service in New Mexico, presents of goods, agricultural implements, and other useful articles, and to assist them to locate in permanent abodes and sustain themselves by the pursuits of civilized life, to be expended under the direction of the Secretary of the Interior..

Indian service in the district of country leased from the Choctaws for the Indians lately residing in Texas.

For the expenses of colonizing, supporting, and furnishing agricultural implements and stock; pay of necessary employes; purchase of clothing, medicine, iron, and steel; establishment and maintenance of schools, and building houses for the Indians lately residing in Texas, in lieu of those abandoned in that State, to be expended under the direction of the Secretary of the Interior

STATEMENT—Continued.

54

APPROPRIATIONS, NEW OFFICERS, ETC.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$1,530,625 38	\$842,865,706 16
<i>For the Wichitas and other affiliated bands.</i>		
For the expense of colonizing, supporting, and furnishing said bands with agricultural implements and stock, pay of necessary employes, purchase of clothing, medicines, iron, and steel, and maintenance of schools, and building agency houses, to be expended under the direction of the Secretary of the Interior.....	37,800 00	
<i>Indian service in California.</i>		
For the general incidental expenses of the Indian service in California, including travelling expenses of the superintending agents.....	7,500 00	
<i>Miscellaneous.</i>		
For transportation and necessary expenses of the delivery of Pawnee, Ponca, and Yantcon Sioux annuity goods and provisions	10,000 00	
For transportation and necessary expenses of the delivery of annuities and provisions to the Indian tribes in Minnesota and Michigan	20,350 62	
For expenses of transportation and delivery of annuity goods to the Blackfeet Indians for the year.....	17,000 00	
For transportation and necessary expenses of the delivery of annuities and provisions to the Chippewas of Lake Superior	5,762 63	
For transportation and necessary expenses of the delivery of annuities and provisions to the Chippewas of the Mississippi.....	3,886 75	
For compensation of five extra clerks employed in the Indian office, under the act of fifth August, eighteen hundred and fifty-four, and third March, eighteen hundred and fifty-five, and under appropriations made from year to year	7,000 00	
For compensation of one clerk in the Indian office to enable the Secretary of the Interior to carry out the regulations prescribed to give effect to the seventh section of the act of March third, eighteen hundred and fifty-five, granting bounty lands to Indians	1,400 00	
For compensation of two extra clerks in the Indian office, employed to carry out the treaty with the Chickasaws in the adjustment of their claims	2,800 00	

For expenses attending the vaccination of Indians.....	2,500 00
For payment to the Shawnees of the residue of seven hundred thousand dollars to be paid after the termination of the seven years stipulated for in the third article of the treaty of tenth May, eighteen hundred and fifty-four.....	89,000 00
<i>Umpquas and Calapooias of Umpqua valley.</i> —For the first and second instalments of the second series of annuities of two thousand three hundred dollars each, not heretofore asked for, for beneficial objects, to be expended as directed by the President.....	4,600 00
For medallions of the President of the United States for distribution to Indian tribes.....	5,000 00
For the general incidental expenses of the Indian service in Oregon and Washington Territory, including insurance and transportation of annuity goods and presents, (where no special provision therefor is made by treaties,) and office and travelling expenses of the superintendent and sub-agents.....	35,000 00
For defraying the expenses of the removal and subsistence of Indians in Oregon and Washington Territory, (not parties to any treaty,) and for pay of necessary employés.....	50,000 00
To carry into effect the treaty of February eighteen, eighteen hundred and sixty-one, with Arapahoes and Cheyenne Indians of the Upper Arkansas river, viz: For surveying the exterior of the reservation and dividing the same between the two tribes, estimated to be three hundred and fifty miles, at an expense of ten dollars per mile for surveying.....	3,500 00
For the first of fifteen instalments of annuity of thirty thousand dollars, to be expended for their benefit—that is to say, fifteen thousand dollars per annum for each tribe, commencing with the year in which they shall remove to and settle upon their reservations, for the fiscal year ending June thirty, eighteen hundred and sixty-two.....	30,000 00
For the second of fifteen instalments of annuity of thirty thousand dollars, to be expended for their benefit—that is to say, fifteen thousand dollars per annum for each tribe, commencing with the year in which they shall remove to and settle upon their reservation, for the fiscal year ending June thirty, eighteen hundred and sixty-three.....	30,000 00
For transportation and necessary expenses of delivering of annuities, goods, and provisions to the Arapahoes and Cheyenne Indians of the Upper Arkansas river for the fiscal year ending June thirty, eighteen hundred and sixty-two.....	5,000 00
For transportation and necessary expenses of delivering of annuities, goods, and provisions to the Arapahoes and Cheyenne Indians of the Upper Arkansas river for the fiscal year ending June thirty, eighteen hundred and sixty-three.....	5,000 00
For the purpose of negotiating a treaty with the Chippewas of northern Minnesota and the extinguishing of their title to the lands in that vicinity, or so much thereof as may be needed for that purpose, to be expended under the direction of the Secretary of the Interior.....	15,000 00
For defraying the expenses of negotiating a treaty with the Shoshonees or Snake Indians, or so much thereof as may be needed, to be expended under the direction of the Secretary of the Interior.....	20,000 00
Amount carried forward.....	1,938,725 38
	842,865,796 16

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
For amount in the hands of late agent W. W. Dennison, unaccounted for, belonging to the Ottoes and Missourias.....	\$1,938,725 38	\$842,865,796 16
For deficiency in the contingent fund of the Indian department for the balance of the half year ending June thirty, eighteen hundred and sixty-two.....	18,970 07	
To enable the President to negotiate a treaty with the Nez Percé Indians of Oregon and Washington Territory for the relinquishment of a portion or all of their present reservation, or its exchange for other lands.....	10,000 00	
<i>Indian service in California.</i> —For salaries of clerks to superintendents of Indian affairs for the northern and southern districts of California, for three quarters of the fiscal year ending June thirtieth, eighteen hundred and sixty-two, at eighteen hundred dollars per annum.....	40,000 00	
For salaries of clerks to superintendents of Indian affairs for the northern and southern districts of California, for the fiscal year ending June thirtieth, eighteen hundred and sixty-three, at fifteen hundred dollars per annum.....	2,700 00	
For compensation of five supervisors for the reservations in California to instruct the Indians in husbandry, for fiscal year ending June thirty, eighteen hundred and sixty-three, authorized by act of June nineteen, eighteen hundred and sixty.....	3,000 00	
For the purchase of cattle for beef and milk, together with clothing and food, teams and farming tools for Indians, for the fiscal year ending June thirty, eighteen hundred and sixty-three, for the northern district of California.....	9,000 00	
For the purchase of cattle for beef and milk, together with clothing and food, teams and farming tools, for Indians, for the fiscal year ending June thirty, eighteen hundred and sixty-three, for the southern district of California.....	5,000 00	
By the act for the relief of the widows and orphans of the officers, seamen, and marines of the United States ships "Cumberland" and "Congress".....	15,000 00	2,042,395 45
To pay the widow, or child, or children, and in case there shall be no widow, or child, or children, then the parent or parents, and if there be no parents, the brothers and sisters of the officers, seamen, and marines, and others in service who were lost in the United States ships Cumberland and Congress, including captain's clerks, a sum equal to twelve months pay of their respective deceased relations, in addition to the pay due to the said deceased at the date of the loss of said vessels.....		Indefinite.

By the act to authorize an additional issue of United States notes, and for other purposes.

To carry this act into effect -----

300,000 00

By the act making further appropriations for sundry civil expenses of the government for the year ending thirtieth June, eighteen hundred and sixty-three, and additional appropriations for the year ending thirtieth June, eighteen hundred and sixty-two.

For the fiscal year ending thirtieth of June, eighteen hundred and sixty-three, viz:

500,000 00

8,000 00

For completing the west wing of the Treasury building -----
For painting the outside of the old portion of the Capitol -----
To pay the amount provided for under, and by virtue of, and act entitled "An act to facilitate communication between the Atlantic and Pacific States by electric telegraph," or so much as may become payable under said act-----

40,000 00

For the purpose of enabling the Commissioner of Public Buildings and Grounds to remove the army bakery from the basement floor of the Capitol and to repair the damage caused by said bakery-----

8,000 00

For constructing burglar-proof vaults for the assistant treasurer at New York and fire-proof file cases for the collector at New York, and for the incidental expenses of a change of location of these offices-----

100,000 00

For annual repairs to custom-houses, including a new roof for the Milwaukee custom-house, and repairing the damage by fire-----

10,000 00

For repairing the government warehouses, wharves, and fences at Staten island-----

15,000 00

For the salary of a commissioner and consul general to the Republic of Hayti-----

7,500 00

For the salary of a commissioner and consul general to the Republic of Liberia-----

4,000 00

For compensation of four additional draw-keepers for the two draws at the Potomac bridge-----

3,066 00

For the fiscal year ending the thirtieth of June, eighteen hundred and sixty-two, viz:

To supply the deficiency in the appropriation for lighting the Capitol and public grounds -----

12,000 00

To supply a deficiency in the appropriation for the Seventh Census -----

3,000 00

For compensation to Henry K. Brown, James R. Lambdin, and John F. Kensett, for thirteen months' service as art commissioners, appointed by the President of the United States under acts of Congress of June twelfth, eighteen hundred and fifty-eight, and March third, eighteen hundred and fifty-nine-----

9,000 00

To pay the amount due under and by virtue of the act entitled "An act to facilitate communication between the Atlantic and Pacific States by electric telegraph," for the period embraced between November one, eighteen hundred and sixty-one, and June thirty, eighteen hundred and sixty-two-----

26,630 44

To supply deficiency in the appropriation for incidental and contingent expenses, including wastage at the mint of the United States at Philadelphia-----

23,643 84

For additional expenses in transportation of bullion and coin between the assay office and the mint, for the year eighteen hundred and sixty-one -----

21,000 00

Amount carried forward-----

790,840 28

845,208,191 61

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	\$790,840 28	\$845,208,191 61
For compensation of Assistant Secretary of the Interior, per act of fourteenth March, eighteen hundred and sixty-two, from fourteenth of March to thirtieth of June, eighteen hundred and sixty-two.....	875 00	
For compensation of the Assistant Secretary of the Interior during the fiscal year ending thirtieth June, eighteen hundred and sixty-three.....	3,000 00	
For compensation of four additional drawkeepers for the two draws at the Potomac bridge, from the dates of their several appointments to the thirtieth June, eighteen hundred and sixty-two.....	395 40	
To supply a deficiency in the appropriation for the contingent fund of the Senate for furniture, fitting of rooms, gas fittings, repairing painting, painting materials, and other miscellaneous items.....	10,000 00	805,110 68
<i>By the act making appropriations for the payment of the bounty authorized by the sixth section of an act entitled "An act to authorize the employment of volunteers to aid in enforcing the laws and protecting public property," approved July twenty-second, eighteen hundred and sixty-one, and for other purposes.</i>		
For payment of the bounty to widows, children, fathers, mothers, brothers, and sisters of such volunteers as may have died or been killed, or may die or be killed in service, authorized by the sixth section of an act entitled "An act to authorize the employment of volunteers to aid in enforcing the laws and protecting public property," approved July twenty-second, eighteen hundred and sixty-one.....	5,000,000 00	
For compensation of twenty additional clerks, hereby authorized to be employed in the office of the Commissioner of Pensions, viz:		
For fifteen clerks of the first class.....	18,000 00	
For five clerks of the second class.....	7,000 00	
For the expenses of the committee on disloyal employes of the government, appointed by resolution of the House of Representatives July eight, eighteen hundred and sixty-one.....	3,000 00	5,028,000 00
<i>By the act for the establishment of certain national arsenals.</i>		
For the establishment of a national arsenal at Columbus, in the State of Ohio, for the deposit and repair of arms and other munitions of war.....	100,000 00	
For the establishment of a national arsenal at Indianapolis, in the State of Indiana, for the deposit and repair of arms and other munitions of war.....	100,000 00	

For the establishment of a national arsenal on Rock island, in the State of Illinois, for the deposit and repair of arms and other munitions of war -----	100,000 00	300,000 00
<i>By the act relating to trust funds of several Indian tribes invested by the government in certain State bonds abstracted from the custody of the late Secretary of the Interior.</i>		
For the payment of interest on bonds purchased for the benefit of the Delaware Indians to the first July, eighteen hundred and sixty-two -----	32,307 91	
For the payment of interest on bonds purchased for the benefit of the Iowa Indians to the first July, eighteen hundred and sixty-two -----	5,032 23	
For the payment of interest on bonds purchased for the benefit of the confederated bands of Kaskaskias, Peorias, Piankeshaws, and Weas, to the first July, eighteen hundred and sixty-two -----	12,726 50	
		50,066 64
<i>By the act to provide for the quieting of certain land titles in the late disputed territory in the State of Maine, and for other purposes.</i>		
To pay for three thousand three hundred and fifty-three acres of land, including the timber previously taken therefrom, in the half township in the State of Maine, granted by the State of Massachusetts to the late General Eaton, and called the "Eaton Grant," to which the title was lost by the operation of the fourth article of the treaty of ninth August, eighteen hundred and forty-two, "to settle and define the boundary between the United States and the possessions of her Britannic Majesty in North America.-----	13,422 00	
To pay for three thousand three hundred and eighty-five acres of land, including the timber previously taken therefrom, in the western half of "Plymouth township," so called, in the State of Maine, to which the title was lost by the operation of the fourth article of the aforesaid treaty.-----	13,540 00	
To pay for sixteen hundred and ninety-two acres of land, including the timber previously taken therefrom, in the eastern half of "Plymouth township," so called, in the State of Maine, to which the title was lost by the operation of the fourth article of the aforesaid treaty.-----	6,768 00	
To pay, at the rate of one dollar per acre, for timber taken from lands owned by said parties, respectively, and located in the Eaton grant and Plymouth township, so called, in the State of Maine, and within the district recognized as the "disputed territory," and which timber was taken off and lost to the proprietors in consequence of the diplomatic arrangement entered into between the United States and Great Britain in eighteen hundred and thirty-two, by which both parties agreed to abstain from the exercise of jurisdiction in said territory.-----	23,610 00	
		57,340 00
<i>By the act making appropriations for the naval service for the year ending thirtieth of June, eighteen hundred and sixty-three, and for other purposes.</i>		
For pay of commission, warrant, and petty officers and seamen, including the engineer corps of the navy ----	11,617,109 00	
	11,617,109 00	851,448,708 93

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward-----		\$851,448,708 93
For the repair and equipment of vessels of the navy-----	\$11,617,109 00	
For fuel for the navy, to be purchased in the mode prescribed by law, for other materials and for the transportation thereof-----	11,400,000 00	
For the purchase of hemp and other materials for the navy-----	2,160,000 00	
For ordnance and ordnance stores including incidental expenses-----	540,000 00	
For provisions for commission, warrant, and petty officers and seamen, including engineers and marines attached to vessels for sea service-----	5,150,000 00	
For surgeons' necessities and appliances for the sick and hurt of the navy, including the engineer and marine corps-----	3,351,521 25	
For contingent expenses that may accrue for the following purposes, viz:	77,900 00	
Freight and transportation; printing and stationery; advertising in newspapers; books, maps, models, drawings; purchase and repair of fire-engines; for machinery of every description and the patent right to use the same; repair of and attending to steam-engines in navy yards; purchase and repair of workmen's tools; and oxen, and driving teams, carts, timber wheels, and the purchase and repair of workmen's tools; postage on public letters; telegrams; fuel, oil, and candles for navy yards and shore stations; pay of watchmen and incidental labor not chargeable to any other appropriation; transportation to, and labor attending the delivery of provisions and stores on foreign stations; wharfage, dockage, and rent for docking vessels; for furniture for government vessels; travelling expenses of officers and others under orders; funeral expenses; store and office rent; fuel, commissions, and pay of clerks to navy agents and storekeepers; flags, awnings, and packing boxes; premiums and other expenses of recruiting; apprehending deserters; per diem pay to persons attending courts-martial, courts of inquiry, and other services authorized by law; pay to judge advocates; pay to lithographers; pilotage and towage of vessels, and assistance to vessels in distress; and for bills of health and quarantine expenses of vessels of the United States navy in foreign ports-----	1,700,000 00	
For clothing for the navy-----	600,000 00	
For the charter of vessels, stores, extra laborers, and purchase of additional steam vessels-----	3,000,000 00	
For pay of lithographer for the year ending June, eighteen hundred and sixty-two-----	300 00	
For repairs, painting, and raising the roof of the Navy Department building, finishing and furnishing the same-----	20,000 00	

MARINE CORPS.

For pay of officers, non-commissioned officers, musicians, privates, clerks, messengers, stewards, and servants ; for rations and clothing for servants ; additional rations for five years' service ; for undrawn clothing and rations, bounties for re-enlistments
 For the support of five hundred and eighty men, authorized to be enlisted for the marine corps by the President of the United States, on the 22d of November, eighteen hundred and sixty-one.....
 For provisions.....
 For clothing
 For fuel.....
 For military stores, viz: Pay of armorers, repair of arms, purchase of accoutrements, ordnance stores, flags, drums, fifes, and other instruments.....
 For transportation of officers, their servants, and troops, and expenses of recruiting.....
 For repairs of barracks, and rent of offices where there are no public buildings for that purpose.....
 For completing repairs of Charlestown barracks
 or contingencies, namely : Freight, ferriage, toll, carriage, wharfage ; purchase and repair of boats ; compensation to judge advocates ; per diem for attending courts martial, courts of inquiry, and for constant labor ; house rent in lieu of quarters ; burial of deceased marines ; printing, stationery, postage, telegraphing ; apprehension of deserters ; oil, candles, gas ; repairs of gas and water fixtures ; water rent ; forage, straw, barrack furniture, bed sacks, spades, shovels, axes, picks, carpenters' tools ; keep of a horse for the messenger ; pay of matron, washerwoman, and porter at the hospital headquarters.....

696, 198 30
 74, 767 40
 143, 445 00
 134, 660 00
 30, 894 50
 15, 000 00
 22, 000 00
 8, 000 00
 10, 458 97

45, 000 00

NAVY YARDS.

Portsmouth, New Hampshire.—For machine shop and smithery ; fitting and furnishing the same ; reservoir, capstan for shears ; quay wall, near landing ; extension of storehouse number eleven one hundred feet ; repairs and increase of ordnance machinery and shops ; and repairs of all kinds.....
 For futtock saw-mill and building.....
Boston.—For paving and draining at new shops ; coal-house, for foundery, smith and other purposes ; reservoir and steam-pump, or pipes for Cochituate water ; water-closets ; repairs and increase of ordnance machinery and shops ; and repairs of all kinds.....
 For house foundation, and heavy Nesmith hammer, for heavy forgings.....
 For the purchase of land and wharf adjoining the navy yard at Charlestown, Massachusetts, owned by Oakam & Eldridge, and extending from Charles river to Water street, and containing about one hundred and twenty thousand square feet
 For futtock saw-mill and building

232, 032 00
 10, 000 00

253, 500 00
 62, 000 00

123, 000 00
 10, 000 00

41, 487, 786 42

851, 448, 708 93

Amount carried forward.....

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
<i>New York.</i> —For dredging channels; building and repairing scows; rebuilding long dock; repair to ship-houses; quarry walls; extension of sewer; boiler-house; foundry shed; machinery for machine shop; foundry, boiler-shop, and smithery; repairs of machinery, boilers; repairs of engines in machine shop; repairs and increase of ordnance machinery and shops, and repairs of all kinds.....	\$41,487,786 42	\$851,448,708 93
For a cylinder for roasting coffee.....	320,846 00	
<i>Philadelphia.</i> —For extension of joiner's shop, storehouses, and smithery; repairs of dry dock; dredging; repairs and increase of ordnance machinery and shops, and repairs of all kinds.....	400 00	
<i>Washington.</i> —For machinery and tools; paving; gas-works; repairs and increase of ordnance machinery and shops, and repairs of all kinds.....	128,746 00	
<i>Mare island.</i> —For completion of derrick, foundry, and equipment; grading; completing officers' houses; gas-works; two iron wharf cranes; machinery and tools for smithery; cisterns; scows, lighters, stages, and pile-driver; drainage and sewerage; boat-house and slip, and repairs of all kinds.....	126,985 00	
<i>Sackett's Harbor.</i> —For repairs of all kinds.....	196,352 00	
	1,500 00	
HOSPITALS.		
<i>Portsmouth, New Hampshire.</i> —For purchase of twenty-seven and three hundred and fifty-five thousandths acres of land on Seavey's island, adjacent to the Kittery navy yard.....	14,500 00	
For hospital on Seavey's island.....	10,000 00	
<i>Boston.</i> —For extension of hospital and repairs of buildings.....	71,500 00	
<i>New York.</i> —For repairs and improvements, and house for surgeon and director of the laboratory.....	21,500 00	
<i>Philadelphia.</i> —For furniture and repairs of same; house cleaning and whitewashing; repairs to furnaces, grates, and ranges; gas and water rent; painting wall on Shippen street, and general repairs.....	5,300 00	
For support of beneficiaries.....	27,000 00	
MAGAZINES.		
<i>Boston.</i> —For general repairs of buildings; addition to magazine, and wall around magazine grounds.....	32,913 00	
<i>New York.</i> —For improvement of armory; house for storage of loaded shells and repairs of all kinds.....	55,249 00	
<i>Philadelphia.</i> —For repairs of wharf and magazine at Fort Mifflin.....	1,500 00	
<i>Washington.</i> —For repairs of magazine and ordnance buildings.....	6,000 00	

<i>Mare Island.</i> —For repairs of all kinds -----	2,000 00
For pay of superintendents, naval constructors, and all the civil establishments at the general navy yards and stations -----	104,584 00
NAVAL OBSERVATORY.	
For the purchase of nautical instruments, repairs of the same, and of astronomical instruments, and for the purchase of nautical books, maps, and charts, and for backing and binding the same -----	60,000 00
For wages of instrument-maker, watchman, porter, and laborer; for keeping grounds in order; for fuel, lights, freights, transportation, and postage; for repairs to buildings and enclosures, and contingent expenses -----	13,000 00
For pay of four aids to be employed at the Observatory and Hydrographical office -----	4,000 00
For wages of watchmen and contingent expenses of the Naval Academy -----	22,797 00
For the pay of mileage of the visitors to the Naval Academy -----	1,000 00
For preparing for publication the American Nautical Almanac -----	25,880 00
42,741,338 42	
By the act making supplemental appropriations for sundry civil expenses of the government for the year ending June thirtieth, eighteen hundred and sixty three, and for the year ending June thirtieth, eighteen hundred and sixty-two, and for other purposes.	
For the fiscal year ending the thirtieth of June, eighteen hundred and sixty-three, viz:	
For mileage and per diem compensation to witnesses, and other incidental expenses of the high court of impeachment in the case of West H. Humphreys, judge of the district court of the United States for the State of Tennessee -----	10,000 00
For laborers employed about the Hall of Representatives -----	1,000 00
For repairing custom-house and post office at Bangor, Maine -----	6,000 00
For salary of clerk to Committee on Public Lands, authorized by resolution of the House of Representatives of May twenty-seventh, eighteen hundred and sixty-two -----	1,800 00
For painting iron fence around LaFayette square and in front of the President's House -----	1,000 00
To enable the President to carry out the act of Congress for the emancipation of the slaves in the District of Columbia, and to colonize those to be made free by the probable passage of a confiscation bill -----	500,000 00
For clerk hire in the consolidated land office at Des Moines, Iowa, to be disbursed by the register at a rate not exceeding three dollars per day, from the thirty-first day of December, eighteen hundred and sixty-one, to the thirtieth of June, eighteen hundred and sixty-three -----	1,638 00
For the pay of a commissioner, and incidental expenses under the "act for the codification and revision of the laws of the District of Columbia," approved May twentieth, eighteen hundred and sixty-two -----	3,000 00
For the fiscal year ending thirtieth of June, eighteen hundred and sixty-two, viz:	
For coal and fireman to warm the library of Congress, on account of a deficiency for the fiscal year ending June thirtieth, eighteen hundred and sixty-two, and for the present fiscal year -----	1,200 00
525,638 00	
894,190,047 35	
Amount carried forward -----	

Object of appropriation.	Amount.	Total.
For the fund of the Patent Office, to supply a deficiency existing under the act of March second, eighteen hundred and sixty-one, entitled "An act in addition to an act to promote the progress of the useful arts." ..	\$525,638 00	\$894,193,047 35
To supply deficiencies in the appropriation for rent of surveyor general's office in California, fuel, books, stationery, and pay of messenger	50,855 49	
For service on such of the routes authorized by the "Act establishing additional post routes" as in the opinion of the Post Office Department may be necessary	2,000 00	
For expenses in carrying into effect the treaty with Great Britain for the suppression of the slave trade	10,000 00	
For the purchase of artificial limbs for soldiers and seamen disabled in the service of the United States, to be expended under the direction of the surgeon general	15,000 00	
By the resolution for payment of the expenses of the joint committee of Congress appointed to inquire into the conduct of the war.		618,493 49
To pay the expenses of the joint committee of Congress to inquire into the conduct of the present war		10,000 00
By the joint resolution authorizing the Secretary of the Navy to test plans and materials for rendering ships and floating batteries invulnerable.		
For the purpose of testing plans and materials for rendering ships or floating batteries invulnerable		25,000 00
By the resolution for the relief of the officers, non-commissioned officers, and privates of the battalion of marines on board the transport Governor on the third of November, eighteen hundred and sixty-one.		
To compensate the officers, non-commissioned officers, and privates who composed the marine battalion attached to the Port Royal naval expedition under Flag-Officer Dupont for the losses of their personal effects by the foundering of the steamer Governor, in which they were embarked, on the third of November last ..		
By the resolution to provide for the presentation of "Medals of Honor" to the enlisted men of the army and volunteer forces who have distinguished or may distinguish themselves in battle during the present rebellion.		7,163 51
To prepare "medals of honor," with suitable emblematic devices, to be presented in the name of Congress to		

such non-commissioned officers and privates as shall distinguish themselves by their gallantry in action, and other soldierlike qualities, during the present rebellion.....	10,000 00	-----
<i>By the resolution making further appropriations for the current and contingent expenses of the Indian department, and for fulfilling treaty stipulations with the various Indian tribes, for the year ending June thirtieth, eighteen hundred and sixty-three.</i>		
<i>For Indian service in Nevada Territory.</i> —For pay of interpreter.....	500 00	-----
For presents of goods and clothing to Indians, to be expended by the superintendent of Indian affairs	5,000 00	-----
For incidental expenses in Nevada Territory, including office and travelling expenses.....	2,000 00	-----
<i>For Indian service in Colorado Territory.</i> —For pay of interpreter	500 00	-----
For presents of goods and clothing to Indians, to be expended by the superintendent of Indian affairs	5,000 00	-----
For incidental expenses in Colorado Territory, including office and travelling expenses.....	2,000 00	-----
For the Indian service in Utah Territory for the fiscal year ending June thirtieth, eighteen hundred and sixty-three:		-----
For interpreter for Shoshonees.....	1,000 00	-----
For interpreter for Utahs.....	1,000 00	-----
For interpreter for Ruby Valley agency.....	500 00	-----
For interpreter for Fort Bridger agency.....	500 00	-----
For interpreter for Spanish Fork agency	500 00	-----
For presents of goods and clothing to Indians, to be expended by the superintendent of Indian affairs.....	5,000 00	-----
For incidental expenses in Utah Territory, including office and travelling expenses	2,000 00	-----
	25,500 00	-----
<i>By the act for the relief of the owner of the British ship Perthshire.</i>		
For detention by the United States steamer Massachusetts, in June last, under the impression that she had unlawfully evaded the blockade of the port of Mobile	1,000 00	-----
<i>By the act for the relief of William Y. Strong.</i>		
For the amount paid into the public treasury on the twenty-seventh of January, eighteen hundred and forty-five	50 00	-----
<i>By the act for the relief of Z. B. Caverly, late secretary of legation at Lima, Peru.</i>		
For his services and expenses as special messenger from Lima to Washington, in eighteen hundred and fifty-nine, eighteen hundred and sixty, and eighteen hundred and sixty-one.....	1,988 00	-----
Amount carried forward.....	894,889,242 35	-----

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount brought forward.....	-----	\$894,889,242 35
<i>By the act for the relief of the owners, officers, and crew of the Danish bark Jorgen Lorentzen.</i>		
For damages occasioned by reason of the wrongful seizure and detention of said bark by the Morning Light, a vessel of the United States blockading squadron, in the month of December last, and as full compensation to the master, mate, and crew of said bark.....	-----	1,850 00
<i>By the act for the relief of the owners, officers, and crew of the Spanish bark "Providencia."</i>		
For damages occasioned by reason of the wrongful seizure and detention of said bark by a steamer of the United States blockading squadron in the month of November last, and as full compensation to the master, mate, and crew of said bark	-----	2,791 91
<i>By the act for the relief of John Skirving.</i>		
For his services in making designs, drawings, and measurements in and about the public buildings in the city of Washington, and other expenses attending the same, under the direction of the Commissioner of Public Buildings, from the year eighteen hundred and forty-two to the year eighteen hundred and fifty-two, inclusive	-----	1,142 00
<i>By the act for the relief of Lieutenant Colonel Charles F. Ruff, of the United States army.</i>		
For the pay and emoluments due him for the months of March and April, one thousand eight hundred and sixty-one, as major of the regiment of mounted riflemen, United States army	-----	449 00
<i>By the act for the relief of Lieutenant Ulysses S. Grant.</i>		
For loss of public funds in his hands, by theft, on the night of the sixteenth of June, eighteen hundred and forty-eight	-----	1,000 00

<i>By the act for the relief of Rose M. Harle, widow of Edward Harle.</i>			
For certain papers prepared by him, by direction of the Commissioner of Patents, illustrative of the "progress of Agriculture in the United States during ten years," and for an article entitled "Railroads of the United States in eighteen hundred and fifty" -----		274 80	
<i>By the act for the relief of the sufferers by the burning of the Washington Infirmary on the night of November third, eighteen hundred and sixty-one.</i>			
For the amount of property lost by each of the sisters of charity and female servants employed in the Washington Infirmary at the time of its conflagration -----		620 00	
<i>By the act for the relief of Commodore Hiram Paulding.</i>			
For his expenses in defending himself against a suit brought against him for taking Charles McDonald, (one of William Walker's followers,) from the steamer "Morgan," at San Juan del Norte, in Nicaragua, and sending him on board the United States ship "Saratoga," in the year eighteen hundred and fifty-seven -----		1,200 00	
<i>By the act to pay B. Y. Shelley for his claim and improvements taken from him by the Omaha reservation in the Territory of Nebraska.</i>			
For all claims of said Shelley against the government of the United States for his "claim" and improvements thereon, which were taken from him by the United States for the Omaha reservation, in Nebraska Territory, in the year eighteen hundred and fifty-five -----		1,315 00	
<i>By the act for the relief of J. W. Nye.</i>			
For balance due for furnishing horses and carryalls, and hauling boxes and other articles for the use of the House of Representatives for the twenty-eighth Congress, under a written contract with the Postmaster of the House of Representatives, dated January the fifth, eighteen hundred and forty-four -----	1,454 84		
For balance due for improvements made on the botanical garden lot and for damages sustained by said J. W. Nye in being deprived of the use and occupation of the lot according to the terms and conditions contained in a certain lease from the President of the United States to said J. W. Nye -----	3,432 44		
Amount carried forward -----		4,887 28	
			894,904,772 34

STATEMENT—Continued.

Object of appropriation.	Amount.	Total.
Amount carried forward.....	-----	\$894,904,772 34
<i>By the act for the relief of Brigadier General Joseph G. Totten.</i>		
For money advanced for the benefit of the United States in the purchase of certain land of William Aspinwall for fortifications on Staten island, in the harbor of New York.....	-----	200 00
<i>By the resolution in relation to the claim of Marshall O. Roberts for the loss of the steamer Star of the West.</i>		
For compensation for the loss of the steamship Star of the West, while in the service and under the direction of the United States	-----	Indefinite.
		894,904,972 34

RECAPITULATION.

Legislative, executive, judicial, and miscellaneous.....	\$13,997,594 56
Army, for the year ending June 30, 1862	238,548,438 77
Army, for the year ending June 30, 1863	542,346,346 55
Navy, for the year ending June 30, 1862	30,486,294 00
Navy, for the year ending June 30, 1863.....	42,741,338 42
Diplomatic and consular.....	1,235,889 89
Indian department	2,117,962 09
Post Office Department	14,744,800 00
Military Academy	156,211 00
Fortifications.....	7,035,000 00
Invalid and other pensions.....	1,450,600 00
Treaty with the kingdom of Hanover	44,497 06
	894,904,972 34

II.—OFFICERS CREATED AND THE SALARIES THEREOF.

By the act (Chap. I) to further promote the efficiency of the navy, approved December 21, 1861.

The President may select any officer from the grades of captain or commander in the navy and assign him to the command of a squadron, with the rank and title of a "flag-officer," to receive "the pay to which he would have been entitled if he were on the active list of the navy."

By the act (Chap. IV) to provide for allotment certificates among the volunteer forces, approved December 24, 1861.

The President is authorized to appoint, for each State having volunteers in the service, three commissioners for procuring allotment certificates for the families of volunteers. No pay allowed by the act.

By the act (Chap. VIII) to promote the efficiency of the dead-letter office, approved January 21, 1862.

The Postmaster General is authorized to appoint twenty-five additional clerks, at an average salary of \$800 per annum, no one to receive over \$1,200.

By the act (Chap. X) to authorize the President to appoint two additional Assistant Secretaries of War, approved January 22, 1861.

The President may appoint two additional Assistant Secretaries of War, whose salary shall each be \$3,000 a year, to continue for one year.

By the act (Chap. XII) authorizing an increase of the clerical force in the War and Navy Departments, approved January 27, 1862.

The Secretary of War is authorized to appoint as follows:

In the office of the Secretary of War, four clerks of class one, at \$1,200 a year each.

In the office of the Adjutant General, eighteen clerks of class one, at \$1,200 a year each, and two messengers. Pay not stated.

In the office of the Quartermaster General, ten clerks of class one, at \$1,200 a year each, and one messenger. Pay not stated.

In the office of the Surgeon General, two clerks of class one, at \$1,200 a year each, and one laborer. Pay not stated.

In the office of the Paymaster General, eight clerks of class one, at \$1,200 each, and one messenger. Pay not stated.

In the office of Chief of Engineers, one clerk of class one, at \$1,200 a year.

In the office of Chief of Ordnance, three clerks of class one, at \$1,200 a year each.

In the office of the Commissary General, three clerks of class one, at \$1,200 a year each, and one laborer. Pay not stated.

The Secretary of the Navy is authorized to appoint four additional clerks of class one, at \$1,200 a year each.

By the act (Chap. XV) to authorize the President of the United States, in certain cases, to take possession of rail road and telegraph lines, and for other purposes, approved January 31, 1862.

The President may appoint, by and with the advice and consent of the Senate, three commissioners to assess the damages suffered by any railroad or telegraph company, and the compensation for the same, each commissioner to be allowed \$8 per day.

By the act (Chap. XXXVI) fixing the number of the House of Representatives from and after the 3d of March, 1863, approved March 4, 1862.

Eight additional members, as follows: One to Pennsylvania, one to Ohio, one to Kentucky, one to Illinois, one to Iowa, one to Minnesota, one to Vermont, and one to Rhode Island, to receive the pay and mileage of members of Congress.

By the act (Chap. XXXVII) to provide for the appointment of additional clerks in the office of the Assistant Treasurer at New York, and for other purposes, approved March 6, 1862.

The Assistant Treasurer at New York may appoint, from time to time, with the consent of the Secretary of the Treasury, such other clerks, messengers, and watchmen, in addition to those already employed, as the public business may require, their compensation to be fixed by the Secretary of the Treasury.

The Assistant Treasurer at New York is also authorized to appoint from among his clerks a deputy assistant treasurer, whose compensation shall not exceed \$3,000 per annum.

By the act (Chap. XLI) making appropriations for the legislative, executive, and judicial expenses of the government for the year ending June 30, 1863, and additional appropriations for the year ending June 30, 1862, approved March 14, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, an Assistant Secretary of the Interior, at an annual salary of \$3,000.

By the act (Chap. XLIII) for a joint commission for the preservation of the Atlantic fisheries, approved March 15, 1862.

The President is authorized to appoint a commissioner to meet such commissioners as may be appointed by Great Britain and France, to form a joint commission for the preservation of the Atlantic fisheries; to carry the act into effect the sum of \$3,000 is appropriated.

By the act (Chap. XLVII) to provide for the appointment of sutlers in the volunteer service, and to define their duties, approved March 19, 1862.

It is made the duty of each commanding officer of a brigade to cause to be selected by the commissioned officers of each regiment one sutler for the regiment; and each regiment of volunteers shall have one sutler, and no more, who shall be the sole sutler to that regiment.

By the act (Chap. XLVIII) to provide for the appointment of clerks in the office of the Assistant Treasurer at Boston, to fix their salaries, and provide for the absence of the Assistant Treasurer, and for other purposes, approved March 19, 1862.

In lieu of the clerks heretofore authorized, the Assistant Treasurer at Boston is authorized to appoint, with the approbation of the Secretary of the Treasury, one chief clerk, at an annual salary of \$1,500; one disbursing clerk, at a salary of \$1,500 per annum; one clerk at \$1,200 per annum, and one messenger, at a salary of \$700 per annum.

By the act (Chap. LIV) for the release of certain persons held to service or labor in the District of Columbia, approved April 16, 1862.

The President shall appoint, by and with the advice and consent of the Senate, three commissioners, who shall hear and determine all claims presented under this act, and shall receive as compensation for their services, upon filing their report, the sum of \$2,000 each.

The said commissioners may appoint a clerk, who shall receive \$200 per month.

By the act (Chap. LV) to reorganize and increase the efficiency of the medical department of the army, approved April 16, 1862.

There shall be added to the present medical corps of the army ten surgeons and ten assistant surgeons, to be promoted and appointed under existing laws.

There shall be appointed twenty medical cadets, who shall receive \$30 per month and one ration a day.

There shall also be appointed as many hospital stewards as the Surgeon General may consider necessary for the public service, whose pay shall be \$30 per month.

The Surgeon General to be appointed under this act shall receive the rank, pay, and emoluments of a brigadier general.

There shall be appointed eight medical inspectors, with the rank, pay, and emoluments each of a lieutenant colonel of cavalry.

There shall be an Assistant Surgeon General and a Medical Inspector General, with the rank, pay, and emoluments each of a colonel of cavalry.

Medical purveyors are also provided for by the act, but the number and compensation are not stated.

By the act (Chap. LIX) to establish a branch mint of the United States at Denver, in the Territory of Colorado, approved April 21, 1862.

The President shall appoint, by and with the advice and consent of the Senate, a superintendent of the mint, at a salary of \$2,000 per annum; an assayer, at \$1,800 per annum; a melter and refiner, at \$1,800 per annum; and a coiner, at \$1,800 per annum.

The superintendent shall appoint as many clerks, subordinate workmen, and laborers, under the direction of the Secretary of the Treasury, as may be required. Compensation not stated.

*By the act (Chap. LXVII) to establish a port of entry in the collection district of Beaufort, South Carolina, approved May 13, 1862.**

There shall be appointed a collector of the customs, who shall reside at said port, at an annual salary of \$1,500.

The Secretary of the Treasury may appoint such inspectors, weighers, gaugers, measurers, and other officers as may be necessary, whose compensation shall not exceed the rates now allowed to similar officers at other ports of entry and delivery.

By the act (Chap. LXXI) to regulate the time of holding the courts of the United States for the district of Kentucky, and for other purposes, approved May 15, 1862.

A clerk shall be appointed at every place of holding circuit and district courts in Kentucky. Compensation not stated.

By the act (Chap. LXXII) to establish a Department of Agriculture, approved May 15, 1862.

The President shall appoint, by and with the advice and consent of the Senate, a Commissioner of Agriculture, who shall be the chief executive officer of the Department of Agriculture, and receive an annual salary of \$3,000.

The Commissioner may appoint a chief clerk, at \$2,000 per annum; and may also appoint such other employes, including chemists, botanists, and others skilled in the natural sciences pertaining to agriculture, as Congress may, from time to time, provide.

By the act (Chap. LXXVI) making appropriations to reimburse the contingent fund of the office of the Secretary of the Treasury, including compensation of additional clerks, who may be employed according to the exigencies of the public service, and for temporary clerks for the current fiscal year, and for the year ending June 30, 1863, and to provide for the employment of additional clerks in the office of the Assistant Treasurer at St. Louis, approved May 20, 1862.

The Secretary of the Treasury is authorized to employ temporary clerks, (number not stated) and classify them according to the character of their services, and allow them such compensation as he shall see fit, which shall in no case exceed \$1,200 per annum.

After the 30th day of June, 1862, there shall be employed in the office of the Assistant Treasurer at St. Louis a chief clerk and teller, at \$1,800 per annum, and an assistant clerk, at \$1,200 per annum.

The clerks authorized by this act are to be in the place of all other clerical force now authorized for the said office.

By the act (Chap. LXXVII) to provide for the public instruction of youth in primary schools throughout the county of Washington, in the District of Columbia, without the limits of the cities of Washington and Georgetown, approved May 20, 1862.

The levy court of the county of Washington shall appoint seven commissioners of primary schools for said county, who shall have power to appoint a clerk and a treasurer of the school fund, who shall each be allowed an annual compensation of \$100.

There shall also be appointed three trustees and a collector for each school district.

By the act (Chap. LXXIX) to provide for the codification of the laws of the District of Columbia, approved May 20, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, three suitable persons to revise and codify the laws of the District of Columbia. No compensation allowed by the act.

NOTE.—The act (Chap. CLXXXII) making supplemental appropriations for sundry civil expenses of the government for the year ending June 30, 1863, and for the year ending June 30, 1862, and for other purposes, approved July 16, 1862, reduces the number of the commissioners to one, and appropriates \$3,000 for his pay and incidental expenses.

By the act (Chap. LXXX) to authorize the appointment of medical storekeepers and chaplains of hospitals, approved May 20, 1862.

There shall be added to the medical department of the army six medical storekeepers, who shall have the pay and emoluments of military storekeepers in the quartermaster's department.

The President is authorized to appoint, if he shall deem it necessary, a chaplain for each permanent hospital, whose pay shall be that of regimental chaplains in the volunteer force.

By the act (Chap. XCI) to allow the State of California an additional representative in the Thirty-seventh Congress, approved June 2, 1862.

The State of California is allowed an additional representative in Congress until the beginning of the Thirty-eighth Congress, to receive the usual per diem and mileage of a member of Congress.

By the act (Chap. XCII) abolishing certain collection districts and reducing compensation of officers of customs in California, approved June 2, 1862.

There shall be appointed an inspector at each of the following places: Monterey, San Diego, Sacramento, Benicia, Stockton, and San Pedro, at an annual compensation each of \$1,000.

By the act (Chap. XCIII) to prevent and punish fraud on the part of officers intrusted with making of contracts for the government, approved June 2, 1862.

The Secretary of the Interior is required to provide in his department a "returns office," in which are to be filed all contracts of the government, and he is authorized to appoint a clerk for said office, at an annual salary of \$1,200.

NOTE.—The operation of this act is suspended until the first Monday in January, 1863, by the act approved July 17, 1862, Chap. CCIII.

By the act (Chap. XCIV) to establish a land office in Colorado Territory, and for other purposes, approved June 2, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, a register and receiver of public moneys for the Colorado district, who shall receive the same compensation as is allowed by law to registers and receivers in Kansas.

By the act (Chap. XCVI) to authorize the President of the United States to appoint diplomatic representatives to the republics of Hayti and Liberia, respectively, approved June 5, 1862.

The President is authorized, by and with the advice and consent of the Senate, to appoint a commissioner and consul general to each of the republics of Hayti and Liberia, whose compensation shall be, according to the act of August 18, 1856, \$7,500, but the commissioner to Liberia shall not receive more than \$4,000 per annum.

By the act (Chap. XCVIII) for the collection of direct taxes in insurrectionary districts within the United States, approved June 7, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, a board of three tax commissioners for each State in which insurrection exists, at an annual salary each of \$3,000.

The commissioners may employ a clerk, whose compensation shall be \$1,200 per annum.

By the act (Chap. CXVI) to change the port of entry for the district of Brunswick, Georgia, approved June 20, 1862.

There shall be appointed a deputy collector, to reside at Darien, and to exercise such powers as the Secretary of the Treasury may by law prescribe. Compensation not stated.

By the act (Chap. CXIX) to provide internal revenue to support the government, and to pay interest on the public debt, approved July 1, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, a Commissioner of Internal Revenue, with an annual salary of \$4,000. And the Secretary of the Treasury may appoint in the office of the Commissioner as many clerks as he may deem necessary or the public service may require. Number and compensation not stated.

The President shall divide the States and Territories and the District of Columbia into convenient collection districts, and appoint, with the advice and consent of the Senate, an assessor and a collector for each district.

Each assessor shall divide his district into a convenient number of assessment districts, and appoint one assistant assessor for each district.

Each collector is authorized to appoint as many deputy collectors as he may think proper, to be compensated by him for their services.

To each assessor there shall be allowed and paid \$3 per day for each day employed in making necessary arrangements and giving instructions to assistants, \$5 per day for every day employed in hearing appeals, making lists, &c., and \$1 for every hundred taxable persons contained on the tax lists as returned to the Commissioner.

Each assistant assessor shall receive \$3 per day for every day actually employed in collecting lists and making valuations, and \$1 for every hundred taxable persons on the tax lists as returned by him to the assessor.

The Secretary of the Treasury may fix such additional rates of compensation to the assessors and assistant assessors in California, Oregon, and the Territories as he may deem just and reasonable.

To each collector, in full compensation for his services and that of his deputies, there shall be allowed a commission of four per centum on the first hundred thousand dollars and two per centum upon all sums above that amount, to be computed on the moneys paid over and accounted for to the Commissioner; but the whole compensation shall not exceed \$10,000, except in collection districts embraced in more than one congressional district.

There shall be designated by the collector in every assessment district, where the same may be necessary, one or more inspectors, who shall receive such fees as may be fixed by the Commissioner of Internal Revenue.

By the act (Chap. CXX) to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the government the use of the same for postal, military, and other purposes, approved July 1, 1862.

The President shall appoint two directors on the part of the government, in addition to those appointed by the stockholders of the company, and he shall also appoint three commissioners to examine and report to him whenever the company shall have completed forty consecutive miles of railroad and telegraph line ready for service. No compensation allowed by the act.

By the act (Chap. CXXIII) to provide for the appointment of an Indian agent in Colorado Territory, approved July 1, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, an agent for the Grand River and Wintah bands of Indians, in Colorado Territory, at an annual salary of \$1,500.

By the act (Chap. CXXVII) to provide for additional medical officers of the volunteer service, approved July 2, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, forty surgeons and one hundred and twenty assistant surgeons of volunteers, who shall have the rank, pay, and emoluments of corresponding grades in the regular army.

Instead of one assistant surgeon, as now provided by law, each regiment of volunteers shall have two assistant surgeons.

By the act (Chap. CXXIX) to establish a land district in the Territory of Nevada, and for other purposes, approved July 2, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, a register and receiver for the district of Nevada, who shall be allowed the same compensation allowed to similar officers under the act of April 20, 1818.

By the act (Chap. CXXXIII) making appropriations for the support of the army for the year ending June 30, 1863, and additional appropriations for the year ending June 30, 1862, and for other purposes, approved July 5, 1862.

The President is authorized to appoint not more than forty major generals and two hundred brigadier generals, and all acts and parts of acts authorizing a greater number of officers of those grades in the army are repealed.

Enlisted men in the ordnance department known as "master workmen" are to be designated as *sergeants*; those known as "armorers," "carriage-makers," and "blacksmiths," shall be designated as *corporals*; "artificers" as *privates of the first class*; and "laborers" as *privates of the second class*. No change of pay is provided by the act.

There shall be added to the clerical force of the Surgeon General's office one clerk of class one and one clerk of class two.

To the clerical force of the Paymaster General's office, twenty clerks of class two and twenty clerks of class one.

To the clerical and other force of the Adjutant General's office, four clerks of class two, six clerks of class one, and ten other clerks at a monthly compensation of \$60.

The Adjutant General may detail ten or more non-commissioned officers of the army to act as clerks in his office.

The President is authorized to appoint, by and with the advice and consent of the Senate, as many military storekeepers in the quartermaster's department of the army, not exceeding twelve, as the public service may require. Compensation not stated.

By the act (Chap. CXXXIV) to reorganize the Navy Department of the United States, approved July 5, 1862.

By this act all offices existing in the Navy Department are abolished, and in lieu thereof the following have been created:

A Bureau of Yards and Docks, a Bureau of Equipment and Recruiting, a Bureau of Navigation, a Bureau of Ordnance, a Bureau of Construction and Repair, a Bureau of Steam Engineering, a Bureau of Provisions and Clothing, and a Bureau of Medicine and Surgery; to each of which there shall be appointed by the President, by and with the advice and consent of the Senate, a chief, whose salary shall be \$3,500 per annum, and who shall hold his office during four years.

The Secretary of the Navy shall appoint clerks and other officers, as follows:

In the office of the Secretary of the Navy, a chief clerk, at a salary of \$2,000 per annum.

One clerk, at a salary of \$1,800, who shall also be disbursing clerk, at \$200 per annum.

Five clerks, with a salary of \$1,600 each; three clerks, with a salary of \$1,400 each; four clerks, with a salary of \$1,200 each; one messenger, at \$900; one assistant messenger, at \$700; and two laborers, at \$600 per annum each.

In the Bureau of Yards and Docks, one civil engineer, at a salary of \$2,000; one chief clerk, at \$1,800; one clerk, at \$1,600; three clerks, at \$1,400 each; one draughtsman, at \$1,400; one clerk, at \$1,200; one messenger, at \$840; and two laborers, at \$600 each per annum.

In the Bureau of Equipment and Recruiting, one chief clerk, at a salary of \$1,800; two clerks, at \$1,400 each; one clerk, at \$1,200; and one messenger, at \$840 per annum.

In the Bureau of Navigation, one chief clerk, at a salary of \$1,800; one clerk, at \$1,400, and one at \$1,200; and a messenger, at \$840 per annum.

In the Bureau of Ordnance, one assistant, to be selected from the commissioned officers of the navy, at a salary of \$3,000; one draughtsman, at \$1,400; one clerk, at \$1,400; one messenger, at \$840; one laborer, at \$600, and one at \$480 per annum.

In the Bureau of Construction and Repair, one chief clerk, at a salary of \$1,800; one draughtsman and five clerks, at a salary each of \$1,400; one clerk, at \$1,200; one messenger, at \$840; and one laborer, at \$600 per annum.

In the Bureau of Steam Engineering, one chief clerk, at a salary of \$1,800; one draughtsman and one clerk, at \$1,400 each; one assistant draughtsman, at \$1,200; one messenger, at \$840; and one laborer, at \$600 per annum.

In the Bureau of provisions and clothing, one chief clerk, at a salary of \$1,800; four clerks, at \$1,400 each; one clerk, at \$1,200; one messenger, at \$840; and one laborer, at \$600 per annum.

In the Bureau of Medicine and Surgery, two clerks, at \$1,400 each, and one messenger, at \$840 per annum.

For the protection of the building there shall be appointed one day-watchman and two night-watchmen, at a salary of \$600 each; and for the care of the building, furnace, and grounds, there shall be appointed one laborer at \$600 and one at \$360 per annum.

By the act (Chap. CXL) to carry into effect the treaty between the United States and her Britannic Majesty for the suppression of the African slave trade, approved July 11, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, a judge and an arbitrator to reside in the city of New York; the judge shall be paid at the rate of \$2,500, and the arbitrator at the rate of \$1,000 per annum.

He shall also appoint, by and with the advice and consent of the Senate, a judge and an arbitrator to reside, respectively, at Sierra Leone and the Cape of Good Hope; each of said judges shall be paid at the rate of \$2,500 per annum, and the arbitrators, each, at the rate of \$2,000 per annum.

The judge at New York shall have power to appoint a clerk or registrar, who shall be allowed the same fees as are allowed to the clerk of the United States court for the southern district of New York for similar services.

By the act (Chap. CXLIII) making further appropriations for sundry civil expenses of the government for the year ending June 30, 1863, and additional appropriations for the year ending June 30, 1862, approved July 11, 1862.

For compensation of four additional drawkeepers for the draws at the Long bridge, an aggregate of \$3,066.

By the act (Chap. CXLIV) making appropriations for the payment of the bounty authorized by the sixth section of an act entitled "An act to authorize the employment of volunteers to aid in enforcing the laws and protecting public property," approved July 22, 1861, and for other purposes, approved July 11, 1862.

For twenty additional clerks to be employed in the office of the Commissioner of Pensions, viz: fifteen clerks at \$1,200 each, and five clerks at \$1,400 each—\$25,000.

By the act (Chap. CL) to authorize the Secretary of the Treasury to appoint a deputy collector of the customs at Chincoteague island, in the State of Virginia, approved July 11, 1862.

The Secretary of the Treasury is authorized to appoint a deputy collector of customs at Chincoteague island, Virginia, whose compensation shall be the legal fees of his office.

By the act (Chap. CLI) relating to schools for the education of colored children in the cities of Washington and Georgetown, in the District of Columbia, approved July 11, 1862.

A board of trustees, consisting of three members, is created, and the Secretary of the Interior is authorized to fill vacancies in the said board as the same may occur. No compensation provided by the act.

By the act (Chap. CLXIV) making appropriations for the naval service for the year ending 30th of June, 1863, and for other purposes, approved July 14, 1862.

The third section of the act provides that there shall be one clerk to the navy agent at Mare Island, California, at \$2,000, and one clerk at \$1,500 per annum. At the navy yard at Mare Island there shall be one clerk to the commandant, at \$1,500; one clerk of the yard, at \$1,500; one clerk to the paymaster and inspector of provisions, &c., at \$1,500; one clerk to the naval constructor, at \$900; one clerk to the civil engineer, at \$900; and one draughtsman to the civil engineer, at \$1,200; and one steward to the paymaster, at \$750 per annum.

The President is authorized to appoint, annually, ten acting midshipmen at the Naval Academy, to be selected from the sons of officers or soldiers, and of officers or men in the naval or marine service, who have distinguished themselves in the service of the United States.

By the act (Chap. CLXVI) to grant pensions, approved July 14, 1862.

The Commissioner of Pensions is authorized to appoint, at his discretion, civil surgeons, to make the biennial examinations of pensioners, required by law, and to examine applicants for pensions; for such examination he shall receive a fee of \$1 50, to be paid by the pensioner or applicant.

The Secretary of the Interior is authorized to appoint a special agent for the pension office, to aid in detecting frauds against the pension laws, at an annual salary of \$1,200.

By the act (Chap. CLXIX) to further provide for the collection of the revenue upon the northern, north-western, and northeastern frontier, and for other purposes, approved July 14, 1862.

The Secretary of the Treasury is authorized to appoint, in cases where ports may be opened within insurrectionary States during the rebellion, special revenue agents of the department at those posts, who shall receive the same compensation heretofore allowed by law for similar duties in such ports.

By the act (Chap. CLXXXI) to amend an act entitled "An act to create a metropolitan police district of the District of Columbia, and to establish a police therefor," approved August 6, 1861. Approved July 16, 1862.

The board of metropolitan police may appoint an officer to be known as the "property clerk," who shall receive an annual salary of \$1,200.

The board may appoint from among the police a sanitary company to consist of not more than ten persons; and they may appoint not more than three surgeons of police, who shall receive, each, a salary of \$300 per annum.

The board may also appoint not more than six detectives, who shall receive a monthly compensation of \$70 each.

By the act (Chap. CLXXXIII) to establish and equalize the grade of line officers of the United States navy, approved July 16, 1862.

First. Nine rear admirals, who shall receive, when at sea, \$5,000; when on shore duty, \$4,000; on leave of absence or waiting orders, \$2,400. When at sea or attached to a sea-going vessel, one ration.

Second. Eighteen commodores, who shall receive, when at sea, \$4,000; on shore duty, \$3,200; on leave or waiting orders, \$2,400. When at sea or attached to a sea-going vessel, one ration.

Third. Thirty-six captains, who shall receive, when at sea, \$3,500; on shore duty, \$2,800; on leave or waiting orders, \$2,100. When at sea or attached to a sea-going vessel, one ration.

Fourth. Seventy-two commanders, who shall receive, when at sea, \$2,800; on shore duty, \$2,240; on leave or waiting orders, \$1,680. When at sea or attached to a sea-going vessel, one ration.

Fifth. One hundred and forty-four lieutenant commanders, who shall receive, when at sea, \$2,340; on shore duty, \$1,875; on leave or waiting orders, \$1,500. When at sea or attached to a sea-going vessel, one ration.

Sixth. One hundred and forty-four lieutenants, who shall receive, when at sea, \$1,875; on shore duty, \$1,500; on leave or waiting orders, \$1,200. When at sea or attached to a sea-going vessel, one ration.

Seventh. One hundred and forty-four masters, who shall receive, when at sea, \$1,500; on shore duty, \$1,200; on leave or waiting orders, \$960. When at sea or attached to a sea going vessel, one ration.

Eighth. One hundred and forty-four ensigns, who shall receive, when at sea, \$1,200; on shore duty, \$970; on leave or waiting orders, \$768. When at sea or attached to a sea-going vessel, one ration.

Ninth. Midshipmen, who shall receive \$500, and when at sea or attached to a sea-going vessel, one ration; their number shall be two for each member and delegate of the House of Representatives, two from the District of Columbia, and ten "at large."

The President may also select, annually, three midshipmen from boys enlisted in the navy, and who have been at least one year in service, six months of which shall have been sea service.

The President may select from the list of captains, by and with the advice and consent of the Senate, and place upon the retired list of the navy nine rear admirals, whose annual pay shall be \$2,000.

Upon the recommendation of an advisory board there shall be selected from the list of captains and placed upon the retired list eighteen commodores, whose annual pay shall be \$1,800.

Captains, when retired, shall receive, \$1,600; commanders, \$1,400; lieutenant commanders, \$1,300; lieutenants, \$1,000; masters, \$800; and ensigns, \$500 per annum.

By the act (Chap. CC) to define the pay and emoluments of certain officers of the army, and for other purposes, approved July 17, 1862.

There shall be added to the adjutant general's department, by regular promotion of its present officers, one colonel, two lieutenant colonels, and nine majors.

By the act (Chap. CCI) to amend the act calling forth the militia to execute the laws of the Union, suppress insurrections and repel invasions, approved February 28, 1795, and the acts amendatory thereof, and for other purposes, approved July 17, 1862.

The President shall appoint, by and with the advice and consent of the Senate, a judge advocate general, with the rank, pay, and emoluments of a colonel of cavalry; and for each army in the field he shall, by and with the advice and consent of the Senate, a judge advocate, with the rank, pay, and emoluments of a major of cavalry.

By the 10th section of the act each army corps shall have attached to it one assistant adjutant general, one quartermaster, one commissary of subsistence, and one inspector general, each with the rank of lieutenant colonel, who shall constitute the staff of the commander.

By the 11th section of the act each regiment of cavalry shall have one colonel, one lieutenant colonel, three majors, one surgeon, one assistant surgeon, one regimental adjutant, one regimental quartermaster, one regimental commissary, one sergeant major, one quartermaster sergeant, one commissary sergeant, two hospital stewards, one saddler sergeant, one chief trumpeter, and one farrier or blacksmith, and consist of twelve companies or troops.

By the act (Chap. CCII) to allow and pay to the State of Missouri the amount of money expended by said State in the arming and paying of troops employed in the suppression of insurrection against the laws of the United States, approved July 17, 1862.

The Secretary of War is authorized to appoint a commission to examine and report upon the claims of the State for moneys expended in the military defence of the United States; the number and compensation of the commissioners not stated in the act.

By the act (Chap. CCIV) for the better government of the navy of the United States, approved July 17, 1862.

The Secretary of the Navy is authorized to appoint a prize agent, or employ counsel, in any case in which he may deem it necessary to protect the interests of captors, at such compensation as he may deem just and reasonable.

By the resolution (No. 14) providing a stenographer for the joint committee appointed to inquire into the conduct of the war, approved February 22, 1862.

The joint committee on the conduct of the war is authorized to appoint a stenographer, to receive the same pay as that received by the reporters of the Congressional Globe.

By the resolution (No. 51) to suspend all payments under the act approved March 25, 1862, entitled "An act to secure to the officers and men actually employed in the western department, or department of Missouri, their pay, bounty, and pension," and for other purposes, approved July 12, 1862.

The President is authorized to appoint, by and with the advice and consent of the Senate, three commissioners to examine the claims arising under the act, who shall receive such compensation as the Secretary of War shall think just and reasonable.

By the resolution (No. 71) making further appropriations for the current and contingent expenses of the Indian department, and for fulfilling treaty stipulations with various Indian tribes, for the year ending June 30, 1863, approved July 17, 1862.

An interpreter for Indian service in Nevada Territory, at \$500 per annum.

An interpreter for Indian service in Colorado Territory, at \$500 per annum.

In Utah Territory.—An interpreter for the Shoshonees, at \$1,000 per annum.

An interpreter for the Utahs, at \$1,000.

An interpreter for the Ruby Valley agency, at \$500.

An interpreter for the Fort Bridger agency, at \$500.

An interpreter for the Spanish Fork agency, at \$500.

III.—OFFICES THE SALARIES OF WHICH HAVE BEEN INCREASED, WITH THE AMOUNT OF SUCH INCREASE.

By the act (Chap. XVII) making appropriations for the consular and diplomatic expenses of the government for the year ending June 30, 1863, and additional appropriations for the year ending June 30, 1862, approved February 4, 1862.

The salary of the consul at Bremen is increased from \$2,000 to \$3,000 per annum.

The salary of the consul at Pictou, Nova Scotia, is changed from fees to \$1,500 per annum.

The salary of the consul at Swatow, China, is changed from fees to \$3,500 per annum.

The salary of the consul at Port Mahon is changed from fees to \$1,500 per annum.

The salary of the consul at Newcastle-upon-Tyne is changed from fees to \$1,500 per annum.

By the act (Chap. CXLIII) making further appropriations for sundry civil expenses of the government for the year ending June 30, 1863, and additional appropriations for the year ending June 30, 1862, approved July 11, 1862.

The salary of the Treasurer of the United States is increased from \$3,000 to \$4,000 per annum.

By the act (Chap. CXLIV) making appropriations for the naval service for the year ending June 30, 1863, and for other purposes, approved July 14, 1862.

The pay of secretaries to commanders of squadrons is increased from \$900 and \$1,000 to \$1,500 per annum.

By the act (Chap. CLXXXI) to amend an act entitled "An act to create a metropolitan police district of the District of Columbia, and to establish a police therefor," approved August 6, 1861, approved July 16, 1862.

The clerk to the board of metropolitan police is styled secretary, and his salary increased from \$1,000 to \$1,200 per annum.

By the act (Chap. CLXXXII) making supplemental appropriations for sundry civil expenses of the government for the year ending June 30, 1863, and for the year ending June 30, 1862, and for other purposes, approved July 16, 1862.

The salary of the Assistant Secretary of the Treasury is increased from \$3,000 to \$4,000 per annum.

By the act (Chap. CCIV) for the better government of the navy of the United States, approved July 17, 1862.

The annual salaries of district attorneys, prize commissioners, and marshals are increased, but such increase is not to exceed for prize commissioner \$3,000, and for marshals and district attorneys \$6,000 per annum.

By the resolution (No. 70) to regulate the compensation for paying pensions, approved July 17, 1862.

The aggregate compensation of pension agents, derived from commissions on disbursements, is increased from \$1,000 to \$2,000 per annum each.

House documents

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